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SYDNEY: SATURDAY, MAY 15, 1920.

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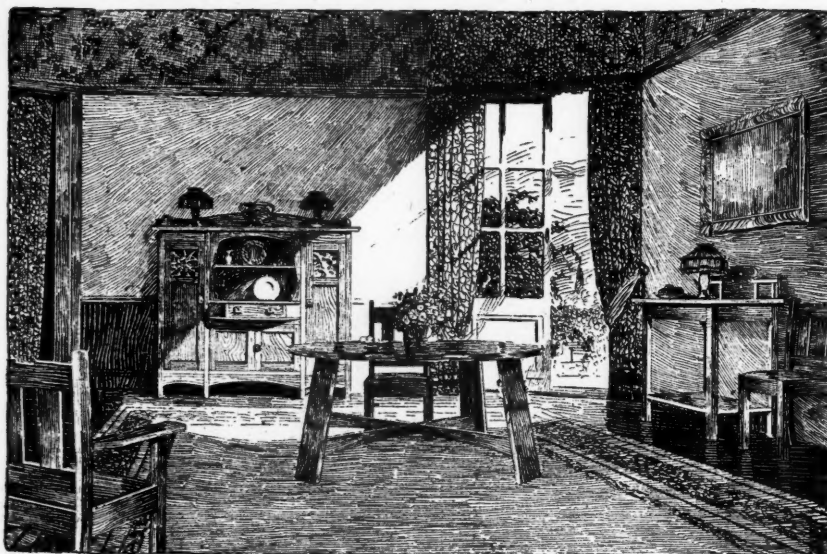
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# THE MEDICAL JOURNAL OF AUSTRALIA.

VOL. I.—7TH YEAR.

SYDNEY: SATURDAY, MAY 15, 1920.

No. 20.

## SOME SURGICAL NOTES.<sup>1</sup>

By T. P. Dunhill, C.M.G., M.D., Ch.B. (Melb.),  
Honorary Surgeon to St. Vincent's Hospital, Melbourne.

To-night I face you not entirely filled with enthusiasm. When your Secretary asked me to address this meeting I felt that it would be ungracious to refuse; I also felt that I would rather like to, not on account of anything special that I had to say, but on account of my affection for this place and for the gatherings that, with a few intermissions, I have attended here with considerable regularity during seventeen years.

And yet the mental turmoil in which one lives in the last days before pulling up one's professional and social and domestic roots, prevents one giving that considered thought to a surgical address which should be given to all subject matter which is presented to this Branch.

I am going to regard it as a sort of final confession, a confession of faith, confession of work, confession of failure sometimes.

I propose to speak for a few minutes about some problems which have arisen in abdominal conditions. Then I would like to show several X-ray pictures illustrating interesting points in fractures; if time remains there are some matters about the thyroid which I would like to discuss. The bell will probably ring before I have reached that point.

It is interesting to see what one's mistakes look like. It has fallen to my lot, as it will have done to all surgeons, to be compelled to do some excisions of the caecum and ascending colon for such conditions as cancer and other types of pathological lesion. In these there had been no morbid sequelæ during the time I was able to keep in touch with these patients. I was fortunate enough to have the opportunity of again opening the abdomen of one of them for gall-stones, which I had seen at the original operation, but which it was out of the question to remove at the time. The union between the ileum and the colon, which in this case was a lateral anastomosis, was quite smoothed off and there were no *culs de sac* protruding from the turned-in ends. The anatomical and functional results were both good.

Then, later, as do all surgeons, I came across cases of obstinate constipation. I had heard and read the criticisms of Lane's operation, the fear of uncontrollable diarrhoea and the likelihood of widespread adhesions and it seemed reasonable to think that if the caecum and ascending colon with the terminal part of the ileum were removed (for Keith puts the block in the nerve nodal points of the terminal part of the ileum), it should be sufficient. It would remove the sluggish part of the ileum, whether the stasis were due to Lane's kink, or to Keith's nerve block; it would remove the movable, swinging cess-pool of the caecum and it would permit the fluid intestinal contents to enter the colon at a point considerably nearer the anal canal than usual and yet sufficiently distal

from it to permit reasonable dehydration and formed stools.

The first patient with this type of condition came along suffering intensely from constipation. It was necessary for her to take three 0.3 grm. cascara tabloids each night, a packet of "salts" in the morning and then probably an enema before she could have a bowel action. If she did not do this, she had no bowel action. She suffered from continual pain and intense nausea and was emaciated. After due consideration and consultation it seemed reasonable to do what I had so safely done in conditions where the pathological lesion had left no choice.

In this case there was found enormous distension of the whole of the large intestine. It was thin-walled, blue and of the size of a child's thigh; practically a type of Hirschsprung's disease. The patient was very frail and the operation was not a short one. I was as quick as possible; one is always careful through the main part of the operation, but the hurry comes towards the end, when one knows that the patient is feeling it. After removing the terminal 20 or 22 cm. of ileum, the caecum, the ascending colon and the first fourth of the transverse colon, three things occurred.

- (i.) I did a lateral anastomosis. Subsequently I have done end-to-side in these cases.
- (ii.) The parts lay well and the patient was exhausted, so I did not spend time in closing the little gap in the mesentery.
- (iii.) For the same reason I did not spend what would have been undue time in making a meticulous toilet of the mesentery.

I want to insist that if I had not hurried at the expense of these three points, the patient might not and probably would not have lived. And yet each one left a morbid result of which I will speak later.

The immediate result was extremely good. The nausea disappeared, a great deal of the pain disappeared, the patient became plumper and took up her old work of teaching. The amount of aperient necessary was reduced to half a cascara tabloid twice a week. This continued for about two years; then the pain began to be troublesome again and the amount of aperient required to be increased.

By the end of three and a half years, increasing pain necessitated further investigation. Efficient X-ray examinations were made, but were not completely helpful. The findings at operation take us back to the three points.

(i.) The lateral anastomosis. It is to be remembered that the trouble was of the Hirschsprung type, with enormous distension. This had worked backwards into the ileum, the ileo-caecal valve having disappeared, and the last few centimetres of ileum had become as distended as the colon. Each end of bowel, which at the operation had been turned in flush with the anastomosis, had ballooned out under the gas pressure into a large *cul de sac*. At first I was inclined to blame the lateral anastomosis for this, as I generally do an end-to-side union. It was not to

<sup>1</sup> Read at a Meeting of the Victorian Branch of the British Medical Association on April 14, 1920.



blame; the essential condition of the patient was to blame, though with end-to-side there would have been only one closed end to balloon out. These ballooned ends were each dealt with and sutured flush.

(ii.) It seemed wiser to leave the gap in the mesentery, which seemed so small, on account of the exigencies of the case, than to take up valuable time in closing it. The edges of this gap had become endothelialized and there remained a smooth ring with rounded circumference covered with peritoneum, through which approximately half the intestines could pass. The coils seemed to be able to enter and leave without difficulty. There was in this, of course, the possibility of catastrophe. The edges were freshened and sutured. This suturing cannot be done at a late period as it can at the original operation.

(iii.) The lack of accurate approximation of the peritoneum of the posterior peritoneal layer had resulted in one cord-like adhesion, about 5 cm. long. This is the type of adhesion which gives trouble. We know this can happen under any circumstances, but it is much more prone to happen when there has been less accurate peritoneal covering of raw surfaces. This type of case will always be met with. I have spoken of it in detail in order that discussion may elicit whether physicians have been able to cope with it medically, or if surgeons have so improved technique that, in controlling the morbid condition, they do not leave morbid sequelæ, which are almost as distressing. In the cases where there is localized disease, these sequelæ have not occurred. Of one thing I am certain, hurried work is bad work.

In constipation of the Hirschsprung type, where the block is physiological and situated near the termination of the colon, Lane's operation of removal of the colon would seem to be necessary. In several other cases, with constipation, but without the enormous dilatation of the colon, the operation I have described above seems to have been effective. The end result of this case is that the bowels are efficiently opened with one small pill.

Next I wish to speak of a case which illustrates a continuous series of difficulties which a surgeon is liable to be compelled to deal with at any time, in which he is driven to undertake procedures, each one of which adds to the difficulties of his task.

A young woman is admitted to the wards with a mid-line incisional hernia of considerable extent and great distress due to the associated adhesions. She has been successfully operated upon elsewhere for acute appendicitis with suppurative peritonitis. Her life has been saved, but Shylock has demanded his pound of flesh; incisional hernia, with universal adhesions in that quadrant of the abdomen.

The incisional hernia is operated upon, with only sufficient freeing of adhesions to enable the hernia to be dealt with efficiently. A week later there is difficulty with the bowels; a week or two later there is absolute obstruction, constant vomiting, inability to retain any fluid. I know this is due to the gluing together of the separated coils of the intestine and that further separation would only mean further and tighter gluing together, besides by this time the woman is very ill. As an emergency I anastomose the ileum, at the most distal portion where it remains free, to

the transverse colon at about the beginning of its second fourth.

This completely relieves all symptoms and the patient is quite well for another fortnight or three weeks, when she becomes again extremely ill, with swelling, pain and tenderness in the right iliac fossa and vomiting. The excluded portion had become a stagnant cess-pool, which was rapidly flaring up. This time I was away and my colleague, Dr. Gordon Shaw, opened the caecum. This completely relieved the woman. She emptied her bowels regularly through the caecostomy opening, could take any food and was quite well; but she had a faecal fistula. There was no stenosis distal to the anastomosis and yet the bowels opened for preference through the caecostomy. A woman in the twenties cannot be left like that, yet nothing but the resection of the whole excluded area up to the anastomosis could be of any use. We knew the condition of the inside of this woman's abdomen; there was not a centimetre of the part that needed removal which was not adherent in all its circumference. In fact that quadrant of the abdomen had ceased to be peritoneal cavity. In addition, the skin of the abdomen was bathed in faeces.

An elliptical incision was made surrounding the faecal opening and the bowel was dissected out—dug out, really—to the anastomosis. That meant about 37 cm. of ileum, the caecum and ascending colon and the first fourth of the transverse colon. The ends were turned in and sutured flush with the anastomosis. There was not peritoneum to cover this raw area; it was drained by a stab incision in the flank. I know of no stage in this woman's illness that could have been avoided. The appendical trouble, with its free pus, had been well attended to by her surgeon. The incisional hernia, due to the drainage, was inevitable. Her condition at the time of the obstruction entirely precluded an enterectomy at the time; a short circuiting was all that could be done. The caecostomy was a matter of urgent necessity and the only way to make the patient into a normal woman again was to excise the faecal fistula with all the adherent and obstructed bowel.

It is a perpetual mystery to me how these cases with soiled skin through faecal fistulae heal as they do. This woman's skin healed by first intention, except at one small spot; I find that this is the rule when efficient care is taken in working out the operative details beforehand. This woman's bowels are open without adventitious aid, in fact they are open too freely.

I wonder if we always realize how much a man is done in, if, in operating we fail to find his lesion and leave him with some added disability. Incisional hernia, with universal adhesions, and the original cause of his distress still undetermined, gives the surgeon some hard thinking to do. A man had been put into a private hospital and his appendix removed for pain. He was no better. Next he was put into the private hospital again and explored for gall-stones. There were no gall-stones. The patient was left with his original pain and the added legacy of a fairly extensive cruciform incisional hernia in the upper abdomen. He became very ill. The pain did not cease; hiccupping rarely ceased; he was unable to work.



The difficulties of getting into an abdomen of this kind are almost insurmountable, but when it did become possible to display the organs, a very obvious duodenal ulcer was seen. Why have I mentioned this case? Because I want to insist that before a man opens an abdomen, I think he should be prepared to explore that abdomen and to deal with any condition—which may require attention, so that the patient will have a reasonable chance of being cured of his ills. This is not by any means an isolated instance of its kind. Among other lesions found in cases where an appendix had been removed for pain, I have found a cancer of the ascending colon; and I know that all surgeons have had similar experiences.

#### About Fractures.

I wish to show, by means of lantern slides, a few pictures to illustrate matters which are, I think, of interest.

(i.) The reproduction of bone, where all the fragments have been removed, leaving apparently only periosteum raised from the fragments with a sharp elevator (Ollier's).

Successive radiographs show the filling in of an interval of 7.5 to 10 cm. with bone which becomes denser each few weeks. Colonel Quick had done successful work in cases similar to this very early in France. This was a case of Lieutenant Perrins. It shows the regeneration well in the successive stages, also abundant vindication of Le Riche's statement that the ends of the main fragments require excision at the beginning, otherwise they will necrose.

(ii.) A series of pictures to show how, in cases with fracture of the upper third of the femur with strong flexion of the upper fragment, the limb was brought into accurate line.

(iii.) A series to show how fractures immediately above the knee-joint, with much shattering of bone, strong flexion of the lower fragment into the popliteal space and so much destruction of soft tissues below that effective slings could not be used for support, may be brought into alignment—in fact, over-corrected—by means of Besley's ice-tong callipers.

#### About Thyroids.

There has been done during the last few years some interesting work in the research laboratories of the Mayo Clinic. Kendall succeeded in isolating the active constituent of thyroid gland in 1914, a crystalline substance with definite chemical formula. After that, although constantly working at it, he was unable to isolate it again until August, 1915. Then, although using more than a ton of material, he was unable to isolate it again until February, 1916. It was then discovered by accident that the presence of carbon dioxide was essential for the separation of the substance. The times when success had been achieved the work had been carried on in proximity to a freezing microtome worked by carbon dioxide. After this the substance was isolated without difficulty. Later, Osterberg, in the same laboratories, succeeded in synthesizing it.

This single crystalline substance relieves all the complex symptoms which we see in a case of myxœdema; not one constituent of thyroid for the hair, one for the brain, one for skin, one for œdema and

so on. The œdema disappears, the skin becomes moist, the sluggish mentality disappears, the hair ceases to fall, all through one crystalline substance. Next, it works with the precision of a chemical reaction; 0.3 mgr. causes the metabolic rate to rise 1% in an adult weighting 68 kilograms. In a myxœdematous patient 10 mgr. increases the metabolic rate 30%.

It means, as Plummer points out, that the active constituent of the thyroid gland (which has been named thyroxin—an abbreviation for thyro-oxy-indol) acts by being the catalytic agent which enables each individual cell of the body to discharge its energy. Plummer and Kendall, from multitudes of observations on metabolic rate, finding the constant increase per amount administered, believe that the exact amount per body weight may be determined and that that amount varies from 23 to 50 mgr. (or  $\frac{1}{3}$  to  $\frac{2}{3}$  grain) in a human being. The chemical formula and its reactions are exceedingly interesting—to a chemist!

In patients with complete atrophy—or absence—of the thyroid the basal metabolic rate falls about 40% below normal. This, as I have said, can be brought up to and maintained at normal by thyroxin. But it makes the problem all the more interesting, why, in patients who have lost the use of their thyroids entirely, the basal metabolic rate does not fall to zero. Why it only falls to 40% below normal, which is myxœdema, instead of 100% below normal, which is death. Something is activating the protoplasm of the body, as a pilot light keeps the gas from going out, but will not boil the billy; or a small jet will keep the engine running, but would not pull the car. Kendall suggests that the other substances within the body, with the same grouping as thyroxin, such as amino-acids, proteins, creatin and creatinin may be able to keep the reaction up to a living rate, but not up to a working rate.

The isolation of thyroxin and the ability to measure its activity have marked an immense advance in thyroid investigation.

Balfour has investigated the statistics of cancer of the thyroid and he has found that cancer has been present in more than 1.6% of all goitre patients admitted to the clinic, exclusive of those with exophthalmic goitre. In almost every case of cancer of the thyroid there has been a long history of pre-existing goitre. I wish to recur to this later.

To return to personal experience. I have become extremely interested for some years in a type of goitre, which may be called toxic adenoma. I know that many of you will have seen these cases and some of my friends have seen them before and after operation. They are not exophthalmic in type, or the ones that I mean are not. Probably the goitre has been present for many years, up to 16 and 25 in two recent cases of mine. Then the heart begins to be irregular and is soon constantly so. These cases are really far from uncommon. During all the years there has been no ill health. The patient has been conscious of nothing more than a lump—in these cases always nodular. But there has been some dystrophy, some altered secretion getting into the blood, the evil effects of which the vigour of youth and maturity have

been able to withstand. And then in middle age, often late middle age, the apex of the heart begins to go out and the patient soon begins to be acutely conscious of an irregularity.

Often enough these tumours are partially and at times completely intrathoracic; they do not appear to be patients that a surgeon would be anxious to operate upon, with their irregular pulse, their late middle age, their shrivelled and often greyish complexions and perhaps the tumour inside the thorax. One might well ask oneself: Is this a pure myocarditis, occurring in a patient who happens to have a goitre, or has the heart given way under the unsuspected toxicity of an innocent-looking adenoma? I have operated upon a sufficient number of these patients now to know that the most irregularly beating heart can settle down to perfect regularity. These cases are not exophthalmic goitre, but they are just as bad. I think you will find these cases full of interest. I want to say that the patients are often desperately ill after the operation on account of the loss of support to the trachea when the hard nodules, perhaps intra-thoracic have been dislodged from the situations where they have impinged on and perhaps distorted the trachea. The trachea becomes flooded with mucus, which these old and frail persons, with their knocked-out hearts, are powerless to expel. For days they nearly die, but do not. Then they become rejuvenated beings.

While nodular goitres will not disappear with medical treatment, while 1.6% of this type ultimately become cancerous and a certain proportion evolve into toxic adenomata with complete heart breakdown, I think we cannot say to a patient with well-marked nodular goitre: "Leave it alone; it will never trouble you."

The problems and the interest associated with each of the three surgical subjects of which I have spoken to-night, are very great; each of them, more thoroughly worked out, would have been more than sufficient for an evening's discussion; but, as I stated in the beginning, the stress and turmoil of the last weeks have prevented me doing more than speak shortly of a few of the points in which I am greatly interested.

#### THE FERRIC CHLORIDE TEST FOR DIACETIC ACID IN URINE.

By L. A. Ivan Maxwell, M.B., B.S., M.Sc.,  
Physiology Department, University of Melbourne.

Joslin, in his book, "Diabetes Mellitus" (p. 394), makes the following statement:—

It is possible that the administration of small quantities of an alkali over long periods may set free acid bodies existing combined, quiescent and harmless in the body and thus do harm . . . the constant use of an alkali appears to promote the constant excretion of acid bodies. I have known a moderate acidosis of months' duration to vanish with the omission of soda. It is frequently to be observed that when an alkali is omitted in the convalescent stages of a diabetic cure that acidosis, as measured by the urine, entirely disappears, but will be brought back by resuming the alkali. A very small quantity of alkali may cause the appearance of a positive ferric chloride reaction in the urine.

Joslin uses the ferric chloride reaction for diacetic acid in urine as the simplest method for the detection of acidosis.

When testing the urine of a patient who had been taking sodium bicarbonate for gastric hyper-acidity, the writer noticed a red colour with ferric chloride similar to that obtained with diacetic acid. As there was no reason in this particular case to suspect acidosis and as the reaction of the urine was intensely alkaline, it occurred to the writer that the sodium bicarbonate might be the cause of the red colour with ferric chloride.

Repeated tests showed that if sodium bicarbonate were added to normal urine and then ferric chloride, the urine became a similar red colour to that obtained in the presence of diacetic acid. In further experiments the urine of the writer, after ingestion of approximately six grammes of sodium bicarbonate during a period of twenty-four hours, also gave a red colour on the addition of ferric chloride. It is well known that salicylates, antipyrine, etc., give a red colour with ferric chloride, which colour is given, even if the urine be previously heated, whereas in the case of diacetic acid, preliminary application of heat prevents the development of the red colour. In a urine containing sodium bicarbonate heat does not prevent the appearance of the red colour on the addition of ferric chloride. Presumably the ferric chloride reacts with the bicarbonate to form ferric hydroxide, which dissolves in the excess of ferric chloride to give the red colour, carbon dioxide being evolved during the reaction. The more bicarbonate present, the deeper the red colour produced.

In conclusion, then, in all cases of acidosis which are being treated with alkalis, it is essential to exclude the possibility of sodium bicarbonate being responsible for the development of the red colour when ferric chloride is added to the urine. If this precaution be overlooked, the dosage of alkali may be increased, in the hope of overcoming an acidosis which in reality does not exist.

### Reports of Cases.

#### CROSS-FIRE RADIUM AND X-RAY THERAPY FOR INOPERABLE MALIGNANT DISEASE.

By Herman Lawrence, M.R.C.P. (Ed.),

Honorary Dermatologist, St. Vincent's Hospital, Melbourne.

A case of inoperable malignant disease successfully treated by radium or X-rays would not of itself, in the light of our present knowledge of the subject, be of sufficient importance to warrant a special report of the circumstance. But it is hoped that some unusual points occurring in the treatment of the case now reported may be looked upon with some new interest by those engaged in the treatment of malignant disease.

Mr. A.B. consulted me in December, 1917. He brought a note from his medical adviser, Dr. J. Kirkpatrick, who stated that the patient had consulted several surgeons and his condition was considered quite inoperable and hopeless from a surgical point of view.

On examination, a large, sarcomatous-looking growth was seen in the region of his left tonsil; the growth was of such a size that the patient had difficulty in swallowing any food. The growth was also present under the left jaw and extended down the neck on the left side of the clavicle. Scar tissue may be seen at the present time in these areas. The Wassermann test was negative and there was no history of specific disease. The case certainly looked hopeless.

However, I had him admitted into a private hospital and radium therapy was at once proceeded with. As far as possible cross-fire radium therapy was adopted to the growth in the tonsillar region, the applicators being adjusted in the following way: Radium tubes were passed through the left nostril into the naso-pharynx. They were also applied to the growth in the throat by means of tubes held in position with forceps placed in the mouth and tubes were fixed at the angle of the inferior maxilla on the left side. The tubes here were pressed under the bone, in order to get a cross-fire with the tubes applied internally. I have several times obtained good results by adopting this method of obtaining a cross-fire for growths in the tonsillar region. The growth beneath the jaw and down the neck was treated by prolonged exposures to well filtered radium radiations from flat applicators. During the first four days the patient had some 3,500 to 4,000 milligram-hours, but the nature of the radiations was varied according to circumstances. The growth was then subjected to some X-ray exposures from a Coolidge tube, radiations of considerable hardness, obtained by aluminium and leaden interceptors, being used. I will not here describe in full the radium and X-rays exposures, as it would take up too much space and would only be of interest to radiologists. But I will presently describe some cross-fire methods I found useful, experimentally, practically and, I believe, founded upon a scientific basis.

In eight days' time from the commencement of the treatment the improvement in the patient's condition was very remarkable. I then administered several similar treatments of shorter duration at intervals of ten days or two weeks. In about three months' time all evidence of the growth had practically disappeared, but recurrences, especially in the lower neck region, occurred. The patient then had treatment at longer intervals for some time.

Many of the treatments consisted of well-protected radium applicators, applied for about sixteen hours, that is, from 4 p.m. to about 8 a.m. next morning. Then an exposure to the X-ray was administered afterwards. As the patient lived in the country, by this method he only lost one day at a time away from his occupation. In fact, with the exception of the first two or three weeks, he had been able to carry out his usual occupation with very little interference by the treatment.

Early in January, 1920, he wrote to me that he was very ill, stating that during the past two or three weeks he had had great pains in the head, with sickness. He was advised to come to town at once. On examination it was found that he had complete ptosis of the left upper eyelid and a marked external squint of the left eye. He looked very weak and ill generally from the intense pains of the head, which prevented him from sleeping; the vomiting had distressed him a good deal. The condition of the parts previously treated was quite good, there being, of course, some telangiectases and scar tissue in evidence.

The symptoms pointing to a recurrence of the growth at the base of the brain, I suggested that the opinion of a physician should be obtained and Dr. Stawell kindly saw

him with me. In consultation we agreed that, as the growth had acted so favourably to treatment previously, it would be worth while to try some method of obtaining a cross-fire with the radium radiations for the present position of the growth. In order to carry out this cross-fire treatment to full advantage, Dr. Stawell suggested that the cranium should be trephined in the left temporal region. The operation was performed at once under local anaesthesia by Dr. Murray Morton. Tubes of radium suitably prepared were placed under the opening in the temporal bone for the first 24 hours and then on the scalp surfaces corresponding to the trephined area for 24 hours. At the same time a cross-fire with radium specimens was obtained by placing radium tubes in the naso-pharynx, by passing them through the left nostril and also by means of the mouth. Radium specimens were also placed over the frontal region on the left side. Roughly speaking, 120 milligrams were applied for 36 to 48 hours, that is, some 4,500 milligram-hours were applied at this treatment. The specimens in the naso-pharynx and at the back of the throat were only applied

for certain hours during the day time, but other specimens were kept continuously in application. Within a week of this treatment there was marked improvement. In three weeks' time the headaches and sickness had disappeared; the patient was sleeping well, the ptosis of the left eye was practically gone and similarly the external squint of the left eye. However, as there was still some diplopia, due to interference with the normal vision, he preferred to use the left eye as little as possible. Otherwise, he was feeling well. He is now back at his usual occupation.<sup>1</sup> What the future of the case may be it is, of course, at present impossible to say, but there is no doubt that his condition on the two occasions mentioned was *in extremis* and yet the treatment succeeded in removing an evidence of the disease. It is now nearly 2½ years since his first radium treatment.

The accompanying radiographs, kindly taken for me by Dr. Argyle, show the position of the radium tubes as applied in the treatment of the patient when he was suffering from symptoms of

of the growth at the base of the brain. The radiographs were not taken during his treatment, but were taken more recently, and the position of the tubes in the naso-pharynx and back of the mouth are not quite correct.

In No. 1 radiogram, taken with the left side of the head upon the plate, shows three tubes and two discs containing 71 milligrams placed at the trephined area of the skull. Tubes containing 10 milligrams and 15 milligrams are placed in the naso-pharynx and at the back of the throat and the specimens containing 25 milligrams are placed in the frontal area. No. 2, taken antero-posteriorly, with the face upon the plate, gives a different view of the specimens similarly placed.

As regards cross-fire radium therapy, I have found by experiments upon insects that a radium radiation (medium hard  $\beta$  rays predominating), when cross-fired with a similar radium radiation, is very destructive to organisms. However, this particular variety of radiation is not often practicable in the treatment of disease, at any rate with the

<sup>1</sup> On May 5, 1920, he was still keeping well.



FIGURE 1.



radium applicators in general use. One might get such a treatment by using needles with radium emanation and passing them close and parallel to one another into the growth to be treated.

However, a cross-fire with a radium radiation (medium hard  $\beta$  rays predominating) and a well filtered radium radiation (practically  $\gamma$  rays only) may be frequently applied. Some of the treatments to the growth in the left tonsillar region were of this nature. I often use a cross-fire consisting of a radium radiation, medium hard or hard  $\beta$  rays predominating and well-filtered hard X-rays from a Coolidge tube. In my opinion, the results of these cross-fires upon pathological tissue must not be taken as the sum of the two radiations. That is to say, if the value therapeutically of radium radiation at a certain point of the growth be equal to  $x$  and the value of the X-ray radiation applied as a cross-fire at the same point is considered as equal to  $y$ , the result of the two radiations at that point is not to be calculated as  $x + y$ , but rather at an increase of probable 50%, that

$$\text{is: } x + y + \frac{x + y}{2}$$

My opinion in this matter has been arrived at from the results I have obtained in experiments with these cross-fire radiations upon the ova and larvæ of insects.

I mentioned previously in treating the growth appearing below the left inferior maxillary bone and down the left side of the neck, I gave prolonged radium radiations at night-time and then applied the X-rays upon the following day. In my book, "Radium Therapy" (1912), I recommended the combined use of radium and X-rays, but it is since that date that I have carried out a series of experiments in connexion with these combined methods of treatment and I consider it advisable that the radium treatment should be given before the X-rays treatment is applied. There are, of course, scientific reasons why a better result should be obtained by this order of procedure, but I do not wish to enter into any further discussion of the subject in this paper.

#### A CASE OF POST-OPERATIVE TETANUS.

By E. Lloyd Parry, M.B., Ch.M. (Syd.),  
Moree, New South Wales.

Mrs. S.N., æt. 40, was operated on January 13, 1920, for chronic appendicitis. The appendix was enlarged and bound down by fairly firm and old-standing adhesions, but no special difficulties were experienced in removing it. The base of the appendix was crushed, ligatured with catgut and

buried with a purse-string catgut suture. Catgut was used for all suturing except the skin, where silk-worm gut was used, on account of obesity. All sterilization of dressings, towels and instruments was carried out by boiling and steaming, as in operations before and since this one. The silk-worm gut was boiled with the instruments before operation.

I always prepare my own catgut in the same way as is done at Sydney Hospital, but on this occasion I used some bought, already sterilized, in sealed glass spools. The spools being put in to spirituous biniodide solution (1 in 500) for two days before the operation.

Recovery from the operation was good and the wound healed perfectly by first intention.

On the eighth day the patient developed trismus and by the tenth day generalized tetanus had appeared. Antitetanic serum was given, at first intrathecally, then subcutaneously, at the rate of 3,000 units a day. In all, 54,000

units were given. A 1% carbolic acid solution was injected subcutaneously round the site of the wound at the rate of 0.3 gramme of carbolic acid in the 24 hours; in all, 4.5 grammes were injected. Morphine with atropine was pushed as far as possible with safety. Chlorotone, chloral hydrate and bromides were tried, but did no good, and morphine was relied on all through.

On the eighth day of the tetanus the temperature had risen to 40.6° C. and the spasms were frequent and very severe. However, the patient pulled safely round that corner, the temperature began to fall, the spasms became less frequent and less severe and by the twenty-first day of the attack recovery was complete. The operation wound had healed perfectly and had come to no harm by reason of the spasms.

When the tetanus first manifested itself I immediately suspected the catgut. I sent the remainder of the spools to the Bureau of Microbiology for examination. Here is the report:—

Anaerobic cultures showed a Gram-positive bacillus, growing in chains, with central spores, no tetanus bacilli appeared in the cultures.

Aerobic cultures showed the presence of bacilli of the *B. mycoides* type.

A guinea-pig was inoculated but remained unaffected. I am still inclined to blame the catgut, because the above report shows the catgut to be far from sterile, as advertised. Tetanus bacillus might easily have existed in a spool that was all used at the operation, or in the catgut used from the spools sent for examination.

I could not locate a focus of infection, which could have been anywhere from the stump of the appendix to the surface of the wound.



FIGURE II.

This is the only occasion since starting practice again on which I have used this already "sterilized" catgut; everything else in connexion with the operation was the same as in other operations before and since.

There is one other possibility, which is also mentioned in Keen's "Surgery" as a means of infection. My patient ate a quantity of raw lettuce salad the day before the operation; the tetanus bacillus may have entered by way of the crushed base of the appendix.

My reasons for reporting this case are that the condition is very rare and because it is necessary to warn those of the profession who use the "already sterilized" catgut mentioned above, that its sterilization can be questioned, as the report shows, and that accidents such as this case may happen.

## Reviews.

### THERAPEUTICS.

The Sixth Edition of Sir William Whitla's "Dictionary of Treatment" fully keeps up the reputation of its predecessors as a reference book for the busy practitioner. It is sound in its teaching and as complete in its scope as the limits of space permit. Throughout the work the author has endeavoured to secure that the information afforded is on a level with the teaching of the day. To attain this he has called to his aid carefully selected collaborators. Good use has been made of the special lessons taught by the war. A curious blending of the past and the present is noted on the one hand in the decided tendency to poly-pharmacy in some of the prescriptions, and on the other in the value attached to massage, ionization and cognate agencies hitherto so little appreciated. Indeed the indications in at least one case quoted are too indefinite in regard to ionization to serve as a guide as to how it should be employed. Among the drugs recommended for the treatment of heart disease, there is a mention of *Cereus grandiflorus*. Careful investigation of this drug has shown that it is unreliable from the point of view of pharmacology, if, indeed, it is not quite inert. The chapter on phthisis is well worth studious perusal. The work, taken as a whole, is most commendable. The publishers, too, have done their share well.

### ADELAIDE MEDICAL STUDENTS' SOCIETY "REVIEW."

A special "reconstruction number" of the *Adelaide Medical Students' Society Review* has been issued in March of this year. The occasion is the reconstruction of the Medical School and the Editors have risen to it by producing an issue with many novel and distinctly interesting qualities. There is less of the usual fun and frolic and no scientific articles. In their place there are articles dealing with the Medical School in its new clothes. The Dean of the Faculty of Medicine contributes a general account of the recent changes in the School. His writings are always good and this one is full of interest. A valedictory essay on Professor A. Watson, with an excellent portrait, closes the old order of things. Articles on Professor T. Brailsford Robertson, Professor Wood-Jones and Professor J. Burton Cleland give the students information concerning the men chosen to guide their studies in physiology, anatomy and pathology. The first of the new Professors contributes an article on the way they manage medical education in the United States and in Canada. In all these articles there is an implied promise of progress in the Medical School, of the adoption of new methods which have been proved to be good and of the discarding of old methods which have been found to be bad. We trust that the old things that are good, will be zealously guarded and retained. The future of the Medical School is in the lap of the gods and their agents are the professors, lecturers and demonstrators who will teach within the University and Hospital. We can but express the hope that the newly-appointed professors will be big enough for their great tasks.

<sup>1</sup> A Dictionary of Treatment, Including Medical and Surgical Therapeutics, Sixth Edition, by Sir William Whitla, M.D., LL.D.; 1920. London: Baillière, Tindall & Cox; Demy 8vo., pp. 1,666. Price, 25s. net.

Among the other articles in this issue the following are worthy of note. A discourse on German New Guinea, by Dr. R. W. Cilento, full of sagacity and facile expression; an historical account of the new *Medical Act* by the President of the Medical Board, appropriate and informative, but somewhat marred by the splitting of infinitives, the unwarrantable use of capital letters and a wanton extravagance in commas; and, lastly, an account of the system of teaching of obstetrics to students in the fourth and fifth years. Mention should also be made of an admirable article entitled "The Medical Conscience and the State," by the President of the Medical Students' Society. It is a philosophical and masterly warning of dangers which should be avoided, but are usually ignored. The issue, as we have already stated, is admirable and refreshing in its departure from the beaten track.

## Congress Notes.

The date of the Australasian Medical Congress is August 23-28, 1920.

The following are the Local Secretaries in the several States:—

*New South Wales:* Dr. F. Brown Craig, Macquarie Street, Sydney.

*Victoria:* Dr. A. Leo Kenny, Collins Street, Melbourne.

*South Australia:* Dr. F. S. Hone, North Terrace, Adelaide.

*Western Australia:* Dr. W. Trethowan, 267 St. George's Terrace, Perth.

*Tasmania:* Dr. E. Brettingham Moore, Macquarie Street, Hobart.

*New Zealand:* Dr. C. E. A. Coldicutt, 82 Simonds Street, Auckland.

*Queensland:* The Honorary General Secretary and the Coadjutor Secretary, c/o. Queensland Branch, British Medical Association, Adelaide Street, Brisbane.

The following is a list of the Honorary Secretaries of the Sections:—

(i.) *Medicine:* Dr. Andrew Stewart, Wickham Terrace, Brisbane.

(ii.) *Surgery:* Dr. Donald A. Cameron, Wickham Terrace, Brisbane.

(iii.) *Obstetrics and Gynaecology:* Dr. Lillian V. Cooper, George Street, Brisbane.

(iv.) *Pathology and Bacteriology:* (In place of Dr. A. W. Dean) D. J. V. Duhig, Wickham Terrace, Brisbane, and Dr. A. Breinl, Institute of Tropical Medicine, Townsville.

(v.) *Public Health:* Dr. J. S. C. Elkington, Federal Quarantine Department, Brisbane.

(vi.) *Ophthalmology:* Dr. J. Lockhart Gibson, Wickham Terrace, Brisbane.

(vii.) *Otology, Rhinology and Laryngology:* Dr. W. N. Robertson, Wickham Terrace, Brisbane.

(viii.) *Diseases of Children:* Dr. A. Jefferis Turner, Wickham Terrace, Brisbane.

(ix.) *Naval and Military Medicine and Surgery:* Dr. G. P. Dixon, C.B.E., Wickham Terrace, Brisbane.

(x.) *Neurology and Psychological Medicine:* Dr. T. H. R. Mathewson, Brunswick Street, New Farm, Brisbane, and Dr. J. R. Nicoll, Hospital for Insane, Toowoomba.

(xi.) *Dermatology and Radiology:* Dr. V. McDowall, Preston House, Queen Street, Brisbane.

Members are particularly requested to announce their intention to read papers to the Sectional Secretaries concerned and not to the State Secretaries. The papers should also be forwarded to the Sectional Secretaries.

### Travelling Concessions.

The following arrangements have been made in regard to railway travelling. Single tickets will be issued at two-thirds of the ordinary fare to members of the Congress in all States except Queensland, provided that not less than six members claim the concession. The wife of a member accompanying her husband may obtain the same concession,

but wives cannot be included to make up the minimum number. The concession is offered by the Commonwealth railways as well as the State railways.

In Queensland a return ticket will be issued for a single fare to members of the Congress.

No concessions could be obtained while the shipping companies were under the Shipping Comptroller. The control has now been removed and a further attempt is being made by the Executive to obtain concessions.

#### Accommodation.

Medical practitioners who intend to join the Congress, are urged to notify their State Secretary as early as possible their requirements for accommodation.

His Excellency the Governor-General has been asked to open the Congress. As his movements are uncertain at present, he is unable to give a definite reply, but he will endeavour to be present.

The Prime Minister has invited Surgeon-General Gorgas and Sir Ronald Ross to attend the Congress as guests of the Commonwealth.

#### The Future of the Congress.

It has been decided by the President and approved by the Executive Committee that a ballot be taken before the final meeting of Congress to decide the question whether or not the Australasian Medical Congress be continued under the present arrangement. A ballot paper with a direct question will be furnished to each member of the Congress, whether he be present at Brisbane or not, so that every member who has paid his subscription, will be able to record his vote in favour or in opposition to the proposed change. The result of the voting will be announced at the final meeting of Congress on Saturday, August 28, 1920. The discussion at the final meeting will depend upon the result of the ballot. Should it be determined that the Congress as it is constituted at present, be discontinued, a consideration of arrangements for future combined meetings of the profession will be needed. In this event, the matter will also have to be referred to the British Medical Association.

#### THE BRISBANE GENERAL HOSPITAL.

In April, 1919, Dr. C. A. Thelander moved at a meeting of the Queensland Branch of the British Medical Association for the appointment of a committee to draw up a set of new rules to govern the appointment of members of the staff of the Brisbane General Hospital (see *The Medical Journal of Australia*, May 3, 1919, p. 370). Drs. C. A. Thelander, C. S. Hawkes and J. C. Hemsley were appointed members of the committee. They submitted a report to a meeting of the Branch in September (see *The Medical Journal of Australia*, October 18, 1919, p. 341). The main points of the recommendations were as follows: (i.) An advisory medical board should be appointed to deal with the election of candidates to the positions on the honorary medical staff, to the position of medical superintendent and to those on the resident medical staff. (ii.) The board should consist of three members of the honorary medical staff, two members of the British Medical Association, not members of the staff, appointed by the Queensland Branch, one representative of the Senate of the University and one member of the British Medical Association, nominated by the Government. (iii.) All appointments should be for terms of five years and medical officers retiring after the expiration of the term, should be eligible for re-appointment. (iv.) Medical officers should retire from the staff on reaching the age of 65 years. (v.) No member of the staff should be allowed to hold a similar position at another hospital, except at a maternity hospital. (vi.) Other things being equal, preference should be given to returned soldiers and to those who had volunteered for war service. (vii.) In the event of this scheme being put into effect, the members at present holding positions on the medical staff should be given twelve months' notice, but that they should be eligible for re-election.

The President and the Honorary Secretary of the Branch brought this matter and the views of the Council to the notice of the Home Secretary on November 14, 1919. They were informed that the Government would be opposed to an advisory board constituted as suggested. Another ob-

jection raised by the Home Secretary to the proposals was that as the medical superintendent was a civil servant, his appointment could not be controlled by a medical board.

On February 12, 1920, the Home Secretary caused a new set of rules to be published in the *Queensland Government Gazette*. These rules provide for the institution of an advisory medical board, consisting of the senior honorary surgeon, the senior honorary physician, the senior honorary medical officer in charge of the special departments, the senior honorary assistant medical officer and the medical superintendent. This board has the duty of nominating members for appointment to the honorary medical staff, but apparently not for the position of medical superintendent. The appointments to the medical staff are for a period of five years and re-election to the same position for a further period of five years is permitted. The age for retirement from the staff is fixed at 60 years. No member of the staff may hold a similar position at another hospital, except at a maternity or a military hospital. New positions of neurologist, dermatologist, radiographer and assistant radiographer have been created. The department for diseases of the eye is separated from that for diseases of the ear, nose and throat.

The following appointments have just been made under the new rules:—

*Senior Surgeon:* Dr. J. Mowbray Thomson.

*Assistant Surgeon:* Dr. A. Anderson.

*Assistant Surgeon to Out-Patients:* Dr. E. S. Meyers.

*Senior Physician:* Dr. Eustace Russell.

*Assistant Physicians:* Dr. W. S. Page, Dr. J. H. S. Jackson, Dr. F. G. Power, D.S.O.

*Assistant Physician to Out-Patients:* Dr. A. P. Murphy. M.C.

*Senior Gynaecologist:* Dr. A. H. Marks, C.B.E., D.S.O.

*Senior Ophthalmologist:* Dr. Robert Thompson.

*Senior Surgeon for Ear, Nose and Throat:* Dr. R. Graham Brown.

*Assistant Surgeon for Ear, Nose and Throat:* Dr. H. V. Foxton.

*Neurologist:* Dr. F. Howson.

*Dermatologist:* Dr. J. G. Avery.

*Senior Radiologist:* Dr. V. McDowall.

*Assistant Radiologist:* Dr. A. T. H. Nisbet.

With three exceptions all the newly elected medical officers are returned soldiers. They are all members of the British Medical Association.

### Naval and Military.

#### APPOINTMENTS.

The following appointments, etc., have been notified in the *Commonwealth of Australia Gazette*, No. 39, of May, 6, 1920:

#### Permanent Naval Forces of the Commonwealth (Sea-Going).

##### TERMINATION OF APPOINTMENT.

The temporary appointment of John Besley Gillen, M.B., Ch.B., as Surgeon Lieutenant is terminated on 12th May, 1920, at his own request.

#### Australian Imperial Force.

##### APPOINTMENTS TERMINATED.

##### Second Military District.

Colonel F. A. Maguire, D.S.O., 12th April, 1920.

##### Third Military District.

Lieutenant-Colonel J. H. Anderson, C.M.G., C.B.E., 6th June, 1920.

Major W. A. Hailes, D.S.O., 16th March, 1920.

Captain A. P. Lawrence, M.C., 23rd April, 1920.

##### Fourth Military District.

Captain F. H. Beare, 18th April, 1920.

It is announced that Thomas Patrick McInerney, Esq., M.A., LL.D., has been nominated for re-election to the position of Warden of the Senate of the University of Melbourne.

The death of Dr. Richard Read, of Wahroonga, New South Wales, took place on May 6, 1920. Dr. Read was 72 years of age.



## The Medical Journal of Australia.

SATURDAY, MAY 15, 1920.

### The Teaching of Medical Chemistry.

There are certain fundamental principles which should govern all endeavours to improve the training of the medical student. The most important of these principles is that the teaching should be adapted to the requirements of practice. The student has to acquire theoretical and practical knowledge in order that he may gain a full understanding of the diseases which he will have to treat as a medical practitioner. It is frequently urged that the knowledge acquired in the physiological laboratories is largely academic and that the medical practitioner can afford to forget it when he leaves the medical school. Nothing could be more disastrous to progress in medical practice than a view of this kind. Medical physics and medical chemistry are the two exact sciences on which medical knowledge is based. Unless the medical practitioner possesses a clear conception of the normal working of the human organs and tissues, it is impossible for him to grasp the significance of deviations from the normal which constitute disease. While it would be foolish to attempt to create expert physicists and expert chemists of all medical students, it is not too much to expect that every student shall be proficient in these sciences in so far as they have application to the functions of the body. A medical practitioner who endeavours to treat his patients without these essential foundations, is but little removed from the charlatan who trades on human weakness and gullability and trusts to mendacious claims of ability to attract guineas to his pocket.

Another important principle in an ideal reform of medical education, which is a natural corollary of the first, is that all those engaged in the teaching of the medical student should themselves have passed through a complete course of training in the science and art of medicine. It is perhaps too much to ask all teachers in the medical schools to be practitioners who have had actual experience in the

practice of medicine; life is too short to permit men destined to become skilled physiologists to devote some years to the practice of medicine. The advantage of experience in private and hospital practice in a teacher is obvious. It is very easy to forget that human beings differ from rabbits and that the mind exerts a very real effect on function.

In the third place, the medical curriculum should be so arranged that the facts taught in each stage can be remembered and correlated to the ultimate problems of the clinic. If a student be taught elementary chemistry before matriculation and a smattering of physiological chemistry in his second year, he must inevitably fail to gain a proper idea of the changes occurring in the digestive or excretory organs or in the metabolism, when he is required to undertake the care of a patient suffering from disorders of the stomach, kidneys or ductless glands. To remedy this defect of the present system, the proposal has been put forward to continue the teaching of medical chemistry throughout the whole course. It needs no advocacy for the suggestion that the teacher responsible for the training in the chemistry of the normal body, usually described as physiological chemistry, should be responsible for the training of chemistry applied to morbid processes. We hold that this subject stands on an equal footing with the physical side of physiology. Consequently, if there is a chair of medical physics, a term preferable to physiology, since it defines the one branch of the science of the functions of the body and since it embraces the science of physical disturbances within the body, there should also be a chair of medical chemistry.

We have recently published a report on the reform of the medical curriculum, in which these conceptions have been embodied. In this report it has been suggested that there should be three professors in each medical school for the fundamental sciences, namely, medical chemistry, medical physics and anatomy. Biology, or the science of living things, would unconsciously enter into the provinces of each of these departments, just as it must necessarily influence the teaching of the professors of the three ultimate sciences—medicine, surgery and preventive medicine. At present the custom of having a chair of anatomy and another of physiology is illogical, because few,

if any, physiologists are at the same time expert physicists and expert chemists. Moreover, it has been found to be necessary in the majority of the medical schools in Europe and America to establish a chair of bio-chemistry, in order to relieve the professor of physiology of the responsibility for the teaching of a very complex science. In the University of Sydney, the necessity of appointing a successor to the late Sir Thomas Anderson Stuart offers an opportune occasion for the reconstruction of the department of physiology. The proposal has been put forward that a chair of bio-chemistry should be established. We would urge that the more logical plan should be followed of creating chairs of medical physics and of medical chemistry. The adoption of this terminology would carry with it an extension of the duties of the professors, inasmuch as each would be required to be responsible for the regulation of the teaching of the respective science throughout the whole curriculum. The Professor of Medical Chemistry would not limit his attention solely to the chemistry of the normal organism, but would include in his syllabus instruction on the chemical characters associated with pathological processes. In the University of Melbourne the teaching of medical chemistry is at present entrusted to a Lecturer on Bio-Chemistry, a Lecturer and Demonstrator on the same subject and an Honorary Lecturer on Clinical Physiology. The term clinical physiology is contradictory and should be discarded. We claim that it would be greatly to the advantage of the already overworked Professor of Physiology if he were relieved of the chemical teaching, so that he might devote his whole attention to the physical aspects of both normal and abnormal function. Similarly, two chairs should be substituted in the University of Adelaide for the present chair of physiology. We are aware that this commendation of a logical reform may evoke the criticism that the proposals cost money that is at present not available. But if it is held, as we hold, that these changes are necessary for the proper education of medical students, and for the efficiency of the medical profession as a whole, it becomes the duty of the State to provide the money. The amount required is not great; far larger sums are found and spent on projects of little national importance. The Australian States must recognize that their parental responsi-

bility demands an adequate expenditure of money on medical education. The endowment of essential chairs is a duty which must be performed by the State.

#### THE SUPPLY OF MILK.

One of the many serious problems in hygiene that await solution is that connected with the guarantee of a supply of pure milk. Governments in Australia have glanced at this problem and have endeavoured to impress the public by asserting that this or that method would be adopted. In no case has any active policy been formulated. Since a good scheme of dairy inspection was introduced, the public health authorities throughout the Commonwealth have been contented to regard the task with complacency. The facts have not been faced and no serious steps have been taken to remedy the existing defects in the methods of collection, distribution and supply. It has been amply demonstrated by the Talbot Milk Association that milk can be produced in excellent quality and delivered in good condition at a reasonable cost to the consumer. In many parts of the world model dairies have been established, where cows, carefully selected after proper veterinary examination, are milked with every precaution as to cleanliness and where the milk, immediately cooled, is placed in hermetically sealed, clean receptacles, for delivery without loss of time to the consumer. The additional cost of scrupulous cleanliness and of proper handling is small. Rapid transit from the dairy to the consumer is often more difficult of attainment, but by utilizing cold storage, even slow transit becomes a matter of small moment. In actual commerce there is a tendency to eliminate every stage of the process that increases the cost of supply. Moreover, the average employee requires constant supervision to insure that the prescribed precautions are carried out to the letter. The supervision is often irksome to the proprietor and always costly. Added to all these dangers and defects in the ordinary commercial undertaking of dairy keeping and milk vending, there has arisen a fresh difficulty. This difficulty has resulted from the demand of the manual worker to shorten his hours of labour. In another part of this issue we publish a short summary of a discussion which recently took place at a meeting of the Queens-

land Branch of the British Medical Association concerning the probable effects of an award determined by a Judge in the Arbitration Court. The award will not be brought into effect for the present, on account of protests that have been raised. In response to the usual demands for shorter hours of work, it has been decided that on Saturdays, Sundays and public holidays the afternoon delivery of milk is to be abolished and the ordinary working day of the employees of dairy proprietors and milk vendors will begin at 5 a.m. instead of 4 a.m.. Even if the milk supply were adequately regulated and properly controlled, the elimination of the second delivery of milk each day would be extremely serious, for the poorer members of the community have neither means nor knowledge to enable them to keep pure milk pure and free from contamination for more than a very few hours. This is a grave source of danger, especially for young children. Babies should so rarely be fed artificially that their welfare is not involved. It is, however, of paramount importance that young children and adults should have plenty of pure, wholesome milk, the best of Nature's foods. If it is dangerous and unjustifiable to abolish the afternoon supply of really pure milk, how much more necessary is the second delivery when the quality of the milk is of the usual low standard. It must be remembered that, while the health authorities claim to carry out a system of inspection of dairies and submit samples of milk for analysis for the detection of added water or abstracted cream, no steps are taken to ascertain the bacterial content either of the milk as it is delivered to the customer, or even of the water which is used in the dairies for the purpose of washing out the receptacles. As hygienists, we are not concerned with the political aspect of the men's demands for shorter hours of labour. We have the duty of issuing an urgent warning to the authorities that the abolition of the second delivery of milk and the delaying by a whole hour of the first daily delivery is an expedient fraught with grave dangers to the race and especially to the young. Australia cannot afford to neglect the lessons of hygiene. Even the most virile race will deteriorate, if the dictates of common sense and of ordinary caution are ignored.

#### ENCEPHALITIS LETHARGICA.

In the wake of the epidemic of influenza a considerable series of cases of illness, characterized by signs and symptoms pointing to a disturbance of function of the central nervous system, was noted. This illness at first was held to be a form of botulism, but later it was shown that it was a definite infection of cerebral tissues. The term *encephalitic lethargica* was introduced, not because it represented a new disease, but because it was supposed to be a form of cerebral involvement, somehow associated with the organisms that acted as secondary invaders in influenza. The term did not meet with universal approval, partly because the characteristic symptom, clouding of intellect, was not a true lethargy. It was, indeed, found that the majority of the patients were insomnolent rather than lethargic, restless rather than tranquil. In the second place, it was noted that the cerebral changes were not well described as encephalitic, but further data was needed, before the pathology could be established. In 1890, Marie described a condition under the name of acute multiple sclerosis, which appears to have many similarities to the disease under discussion. The lesions in the disease described by Marie were limited to a great extent to the white matter of restricted tracts of the cerebrum and to the meningeal covering of these affected areas. Whether this term would be preferable to that of *encephalitis lethargica* for the epidemic or endemic infection referred to above, remains to be shown when the reports of pathological studies of a large number of cases are available. An interesting and suggestive communication on the bacteriology and morbid histology of the disease has recently been made by Dr. P. F. Morse and Dr. E. S. Crump of Detroit.<sup>1</sup> These observers had the opportunity of studying the central nervous system of six persons dead of *encephalitis lethargica* and describe by word and by picture the lesions found after careful examination. Briefly summarized these lesions resolve themselves into a low grade lepto-meningitis with some oedema and slight round cell infiltration. In the white matter, especially of the caudate and lenticular nuclei, optic thalamus, *pons varolii*, *medulla oblongata* and the posterior horns of the cervical portion of the spinal cord, there was a perivascular infiltration, with consequent oedema and at various situations minute haemorrhages. In the grey matter an occasional degenerated cell was found, but this was so rare and so little constant, that they were compelled to regard these changes as unimportant and not essential. The interstitial character of the lesions of the white matter is said to be typical of a low grade meningo-myelitis. It certainly appears to differ essentially from the usual forms of encephalitis.

The same authors have made an important bacteriological study of the fluid contained in the lateral ventricles of the brains of the six persons a few hours after death from the disease. They were able to cultivate in all six cases a Gram-positive coccus, with definite cultural, morphological and bio-chemical qualities. The cocci were agglutinated somewhat feebly by the serum of persons convalescent from the

<sup>1</sup> The Journal of Laboratory and Clinical Medicine, February, 1920.



disease and of two persons in the acute stage. The serum of a third patient seriously ill with the disease caused a more energetic agglutination of the organisms. On the other hand, no trace of agglutination was noted when the serum of normal persons was used. The organisms injected sub-durally into rabbits gave rise to a fatal illness, characterized by a state of lethargy. After death changes similar to those detected in the human brains were seen in the brains of the rabbits. The same organisms were recovered, apparently in pure culture, from the ventricles of the rabbit's brains. A bouillon culture of the cocci was passed through a Berkefeld "N" filter and the filtrate, which proved to be sterile as judged by the ordinary tests, was injected sub-durally into rabbits. A similar illness with lethargy was induced, but the ventricular fluid was found to be sterile. The brain of the animal treated with the filtered culture was, however, free from purulent exudate. The authors endeavoured to determine whether the result of this experiment depended on the presence of a filterable organism, growing in symbiosis with the cocci, or on the presence of a soluble toxin. First they demonstrated by a direct experiment that the changes were not due to the bouillon. In the next place, they found that subcultures from the filtrate in bouillon failed to reproduce the symptoms. They admit that if the filtrate contained a filter passing organism which would grow only in the presence of the coccus, this result would be obtained, but they are inclined to the opinion that the filtrate derived its action from a toxin of the cocci. The cocci failed to produce illness in rabbits when introduced intravenously. They call attention to the fact that the organism found by them seems to be identical to the organism isolated from the central nervous system of patients with *encephalitis lethargica* by Stafford, although it was stated by him that the organism was non-pathogenic for rabbits when injected into the spinal canal.

#### ANÆSTHESIA AND SURGICAL RISKS.

When a patient comes under the care of a surgeon, either in private or in hospital practice, he has a right to expect that, before he is subjected to an operation, every care will be taken to ascertain the exact nature of the disturbance requiring correction or removal and the exact condition of the body, lest the operation, with the necessary anæsthesia, should involve a risk greater than that of the affection for which he is seeking relief. Surgeons will have to submit, in the near future, to some form of control, at all events in hospitals, in regard to the frequency of pre-operative diagnosis and to mistakes in diagnosis. This is one of the several essential elements of what the Americans call "hospital standardization." Those who have witnessed deaths from anæsthesia resulting from want of precautionary measures, especially when the operation was a relatively trivial one, will welcome any information to indicate the degree of risk a patient is running when he is subjected to an operation. Some very useful data has been supplied by Dr. A. H. Miller, the President of the American Association of Anæsthetists, in con-

nexion with this subject.<sup>1</sup> He recognizes three classes of patients. The first he calls "good risks." They are persons free from organic disease, who undergo surgical operations devoid of danger to life. They are expected to recover. The second group, which he calls "fair risks," comprises persons who are suffering from some organic disease, but who have to undergo an operation for a surgical condition without grave risk. The third group he calls "poor risks." The persons included are seriously ill; recovery is unlikely without an operation and the issue is doubtful, even when the operation be performed. If a death takes place of a patient belonging to the first group, an effort should be made to ascertain whether the pre-operative prognosis was in error or whether the fault was with the surgeon. Dr. Miller has used a series of 1,000 consecutive operations to ascertain if the behaviour of the pulse and of the blood pressure can provide a reliable guide to the prognosis. Moots has stated that when the ratio between the kinetic energy expended by the cardiac contraction in moving the blood column and the potential energy stored in the arterial walls and the column of blood they control lies between 25:100 and 75:100, an operation may be undertaken. When the ratio lies beyond these limits the risk is too great. McKesson found that if the blood pressure remained at a low level and the pulse-rate was rapid for 30 minutes, almost every patient succumbed either soon after the operation or at latest within three days. Dr. Miller applied Moots's rule to his patients. Of the patients in whom an operation did not appear to involve a grave risk, 3.23% died and 96.77% recovered. On the other hand, 23% of the others died and 76.93% recovered. Applying McKesson's test, he found that when he reported to the surgeon that the diastolic pressure was 80 mm. or less, the pulse pressure 20 mm. or less and the pulse-rate 120 or more, and when the surgeon completed the operation rapidly, all the patients recovered. Of thirteen of his patients who remained in the danger zone from 25 to 70 minutes, nine died.

Dr. Charles W. Moots and Dr. E. I. McKesson state that in sleep and in ideal anæsthesia the pulse-rate and blood pressure are lowered, but their normal relationship is maintained. They have come to the conclusion that an increase of from 10% to 15% in the pulse-rate without any change in the blood pressure or a decrease of 10% to 15% in the blood pressure without any change in the pulse-rate is without significance in connexion with the safety of the patient. When the increase in the pulse-rate reaches from 15% to 25% and the decrease in the blood pressure reaches 15% to 25%, the patient is in a danger zone. Recovery is unlikely when the pulse-rate is increasing progressively and is above 100 per minute, when the blood pressure is 80 mm. or more and when the pulse-pressure is 20 mm. or less for more than twenty minutes. They claim that graphic records of the pulse and pressure should be taken every few minutes in all serious operations and in many minor ones.

These observations are worthy of attention. Anæsthetists should test the reliability of using the blood

<sup>1</sup> Bulletin No. 1., National Anæsthesia Research Society, January, 1920.

pressure and pulse records as a guide to the prognosis in all patients undergoing operation. The finger is unreliable for the purpose of gauging either the pulse-rate or the pulse pressure. Proper readings should be made before the patient is anaesthetized and continuous observations of the records should be carried out during the procedure. If the American anaesthetists have indicated a means of avoiding danger, it should be applied as a routine in all cases.

#### LATENT TUBERCULOSIS.

The problem of latent tuberculosis has awakened fresh interest on account of the large number of cases of tubercular infection becoming manifest in soldiers under the strain of active service. It is generally admitted that the majority of cases of active tuberculosis observed amongst troops are rightly regarded as representing a recrudescence of latent disease rather than a fresh infection. It is a matter for regret that subjects of latent tubercular infection should have been passed into the armies as physically fit for service. In a recent discussion of this aspect of the tuberculosis question Dr. O. W. McMichael<sup>1</sup> asserts that the fault lies in our conception of the disease and in the methods employed for its detection rather than in negligence or want of skill on the part of medical officers examining recruits. It is obvious that in every-day life the concept of tuberculosis varies greatly in the minds of medical men. The term "incipient tuberculosis" is often misapplied to cases which exhibit well marked "early" signs of involvement of the lungs. The constant warfare between the body cells and the tubercle bacillus should form the basis of our conception of tubercular infection rather than the struggle at one particular location where the enemy is threatening to break through the line of defence. The portals of entry for infection are numerous. Thence the bacillus may be carried by the blood or lymph streams to various organs and tissues.

If early evidence of the occurrence of infection is to be recognized, search must be directed, not to the gross damage that results after years of growth and multiplication of the organism have come to interfere seriously with the functions of the organ involved, but rather to the more subtle effects of the slow poisoning of the host by the products of the tubercle bacillus. The terms "latent tuberculosis" and "incipient tuberculosis" are sometimes applied so as to suggest that there is a period when the tubercle bacillus is inactive. "Latent tuberculosis" should refer rather to the phase of the disease between the time of infection and the time at which sufficient damage has been produced to allow tuberculous disease to be recognized clinically. Throughout this period the human body is waging a constant warfare against the tubercle bacillus and its proteins. The soluble split products of these proteins are poured into the blood stream, antibodies are produced and the struggle continues. The host is well or ill as the tide ebbs or flows. This intoxication is constantly present in latent tuberculosis. The function of almost every organ may be disturbed, owing to the absorp-

tion of the proteid material, so that it becomes a difficult matter to enumerate categorically the early symptoms. Lowered blood pressure and the consequences arising from deficient circulation are amongst the well-recognized signs. Disturbance of the balance of the endocrine organs is frequently manifested by thyroid enlargement. A reaction to a diagnostic injection of tuberculin is often the earliest tangible proof of infection. The tuberculous soldier has served to emphasize that, under conditions of stress, latent tuberculosis may readily become active tuberculosis and that more attention should be given to the early manifestations of infection and toxæmia. The importance of early diagnosis is obvious, because it is the first essential for success in the battle against this scourge of humanity.

#### THE VISIT OF THE PRINCE OF WALES.

The Council of the New South Wales Branch of the British Medical Association has recently considered a proposal to demonstrate its loyalty to the Crown by erecting a suitable arch in one of the main streets of Sydney in welcome of His Royal Highness the Prince of Wales. A loyal address of welcome is being prepared by the Federal Committee in the name of the British Medical Association in Australia. The individual Branches will probably select various ways of offering a welcome to the Prince. The erection of the proposed arch of welcome in Sydney will be a relatively costly undertaking. The Council of the New South Wales Branch is appealing to its members for contributions to enable it to carry out the project. The sum of £500 is required. As there are 1,200 members of the Branch, there should be little difficulty in raising this sum. The Council is asking members to contribute one guinea each. Past experience has shown that in appeals of this kind approximately one-third of the members respond. Unless a larger proportion of the members subscribe to this fund, one guinea from each of those who come to the assistance of the Council, will not cover the cost. For the present we would invite members of the New South Wales Branch to contribute one guinea or more. Cheques should be sent to the Honorary Treasurer, Dr. W. H. Crago.

Dr. T. P. Dunhill, C.M.G., was entertained on April 30, 1920, at the Occidental Hotel, Melbourne, by the members of the medical and surgical staffs of St. Vincent's Hospital. He was presented with a handsome desk made of Australian wood and suitably inscribed, as a mark of their esteem and goodwill, on the occasion of his departure for London. The presentation was made by Dr. A. E. Rowden White, Chairman of the Staff. Dr. L. S. Latham, Dean of the School, and Dr. Murray Morton, Senior Surgeon to the Hospital, paid a tribute to the work done by Dr. Dunhill during the past twelve years. Dr. Dunhill, in thanking his colleagues, gave an interesting sketch of the new educational movement in London, in which he will take a part as Assistant Director of Surgery at St. Bartholomew's Hospital.

It is with great regret that we have to record the death of Dr. H. W. Bryant, of Melbourne, on May 7, 1920.

Much regret is felt at the death of Dr. E. J. S. Spark, of Brisbane, which took place on May 4, 1920.

<sup>1</sup> Medical Record (New York), February 21, 1920.



## Abstracts from Current Medical Literature.

### ORTHOPÆDIC SURGERY.

#### (171) Obstetric Paralysis.

The causation of flaccid paralysis during birth has led to a great deal of discussion and there are numerous theories and experimental evidence brought forward to account for it. Duchenne believed that the pressure of forceps or fingers on the brachial plexus was the direct cause. Erb supported this view and mentions the Prague grip as a likely factor. Fleux opposed Erb's view in that Erb's point was too small and pressure would have to be sharply localized. He produced the paralysis in rabbits by pulling the head forcibly to one side. Shoemaker conducted experiments on cadavers with the brachial plexus exposed and could always tear the fifth and sixth cervical nerves, but never the seventh and eighth. H. B. Robinson, after observing 17 cases, of which 13 were in girls, concluded that when the head was not large, the shoulders were obstructed by insufficient dilatation and became caught or were only delivered with difficulty. T. T. Thomas, following Lange's theory ascribed the paralysis to dislocation of the shoulder during birth. J. W. Sever (*Canad. Med. Assoc. Journ.*, February, 1920) by numerous dissections on infantile cadavers, has shown that traction and forcible separation of the head and shoulders puts the upper cords, the fifth and sixth cervical roots, under dangerous tension. Forcible abduction and elevation of the arm affected the eighth cervical and first thoracic similarly. Even when considerable force was used he was unable to tear across the fifth and sixth nerves at Erb's point. The nerves frayed out within the sheath, following a partial tearing or rupture of the sheath, which always gave way first. This is in keeping with the pathological findings recorded by Prout. A fractured clavicle allowed the shoulder to drag on the plexus and thus caused greater injury to the plexus. To investigate Lange's theory the author injected the shoulder joint of several infants with methylene blue, and then caused rupture of the capsule. After several weeks a dissection was made and in no case did the methylene blue go above the clavicle, but completely invaded and surrounded the plexus in the axilla. If the paralysis were due to pressure of the exudate following rupture of the capsule, there would be paralysis of the whole arm and not merely of those nerves which pass through Erb's point. The X-ray examination of two hundred patients, varying in age from two days to 18 years, showed practically no change in the first year, except a slight posterior subluxation of the shoulder joint. There was no acromial deformity nor displacement of the humeral epiphysis. The humerus was invariably smaller than on the unaffected side as a result of atrophy of disuse. The scapula was elevated and out-

wardly rotated. In older cases deformity of the acromion appeared and consisted of a bending downwards and forwards or a hooking of the outer end. No case has been observed in which there has been a total dislocation of the shoulder. The author describes in detail the clinical findings and adds that atrophy of muscle in these cases is not extensive, because the innervation is not wholly lost. As regards treatment, these cases resolve themselves into two divisions, namely, those to be treated with massage and exercise, principally of the upper arm type, and those to be treated by operation on the plexus, usually those of the lower arm type. If the treatment of the upper arm type is not adequate, operation will have to be considered also. The author's operation (see *The Medical Journal of Australia*, July 13, 1918, p. 34) consists of correction of the deformity by division of the pectoral and subscapularis muscles, maintaining the limb in abduction, with lateral rotation of the shoulder joint and supination of the forearm. A splint is used day and night for three months and the patient is massaged and exercised. For three months longer the splint is worn at night.

#### (172) The Treatment of Central Luxation of the Femur.

The physical signs of fracture of the base of the acetabulum with penetration of the femoral head, although quite distinctive, are often overlooked at the time of accident. The prominence of the trochanter is lost. The limb is somewhat adducted, flexed and slightly shortened. Movements are relatively free in flexion and extension, but are limited in rotation. Abduction is almost completely absent because of the contact of the trochanter with the acetabulum. The practical indication in treatment, therefore, is to insure a sufficient range of abduction. This may be accomplished by the abduction method, as applied for fracture of the neck of the femur, although the mechanism is quite different. In this case the point where the trochanter touches the acetabular rim, is used as a fulcrum against which the leverage of the extended limb may be utilized to withdraw the head of the femur from the pelvis. The patient is anesthetized and placed on a pelvic support provided with a perineal bar, the two extended limbs being supported by assistants, who draw the patient firmly against the perineal bar. The sound limb is then abducted as far as possible. Traction is made on the injured limb while it is gradually and forcibly abducted. In this attitude a plaster "spica" bandage is applied from the nipples to the knee. The plaster is retained for some months to allow the cavity to be obliterated by natural processes. Walking is allowed as soon as there is no increase in discomfort during locomotion, since displacement is impossible in the abducted attitude. If the pelvis is so fractured that effective leverage cannot be employed, a sufficient range of abduction is attempted

by direct manual traction combined with gentle lateral movement of the thigh. The author, Royal Whiteman (*Annals of Surg.*, January, 1920), has seen six cases of this type of injury and thinks that the so-called disabling contusions about the hip are in reality fracture of the femur or the pelvis, leaving uncorrected deformity or pain and weakness which leads to limitation of movement.

#### (173) The Anatomy of Snapping Hip.

F. Wood Jones (*Journ. Orthop. Surg.*, January, 1920) records the history of two cases of snapping hip. X-rays and manual examination under anesthesia revealed nothing. The snap was produced in both cases by the man standing and rotating his affected leg, while it was supporting his weight. Both cases were treated by manipulation, contrasts baths and gymnastics without improvement. Under anesthesia it was impossible to reproduce by manipulation the snap made during consciousness. However, when the *gluteus maximus* was electrically stimulated and in the state of active contraction, the snap could be elicited every time the great trochanter was rotated backwards and forwards. After the insertion of the muscle had been divided and reflected towards the middle line, it became apparent that the structure which caused the snap, was the tendon developed on the deep surface of the muscle. This tendon is usually present and constitutes the insertion of the *gluteus maximus* to the gluteal ridge of the femur. In both cases the author thinks that the tendon was in an unusual state of development. From an examination of series of tendons in the dissecting room, it appears probable that many persons would have some power to produce a snap as the trochanter passes backwards and forwards under the tendon. Stitching this tendon to the surface of the trochanter put a stop to the production of the snap. The author suggests that in these two cases individual peculiarity had been exploited for military purposes.

#### (174) Stripping the Os Calcis.

From anatomical studies made by Dr. H. H. Prentice at the State University of Iowa, Arthur Steindler has evolved a safe technique for the performance of his operation for the treatment of certain cases of cavus deformity of the foot (*Journ. Orthop. Surg.*, February, 1920). A curved incision is made horizontally from the posterior aspect of the heel to a point 3.75 cm. in front of the tubercle of the *os calcis* on the inner side of the foot. The planter fascia is then defined in its entire width and incised at its insertion to the *os calcis*. With a sharp periosteal elevator a sub-periosteal stripping of all the structures attached to the lower surface of the *os calcis* is then carried out. Care should be taken that the procedure is carried well to the outer side of the foot under the calcaneo-cuboid articulation, in order to detach the long planter ligament. The



plantar vessels and nerves are avoided by keeping close to the inner tubercle of the *os calcis*.

#### MORPHOLOGY.

##### (175) Results of Removal of Thymus Glands in Tadpoles.

Bennet M. Allen presents the results of earliest removal of the thymus glands in *Rana pipiens* tadpoles (*Journ. Exper. Zoology*, February 20, 1920). These glands arise as a pair of epithelial buds from the dorsal portions of the second gill pouches, thus rendering their removal an easy operation in the anurans during larval life. The time chosen was when the larvae were of a total length of 8 to 8.5 mm. A knife-edged needle was used to open into the side of the head beneath and behind the auditory vesicle. The white spherical thymus buds were exposed on each side and were easily extirpated in their entirety. The tadpoles rapidly recover and undergo normal development, passing through metamorphosis in the usual time and in the normal fashion. The utmost care was taken to search for the thymus glands or any possible remnants of them in the operated tadpoles, but no traces were found. The work is important, in that it is the first series of experiments in which thymus glands were removed at their very inception. It is clear from the results obtained that the thymus glands exert no influence upon metamorphosis, nor do they have any appreciable influence upon growth in size. Attention has often been called to the interrelation in mammals between the thymus glands and the germ glands, especially noticeable being the persistence of the thymus glands after castration. This, however, does not prove that they, in their turn, exert any active influence upon germ glands. The conclusions of the present work are entirely at variance with the claim of Adler that there is a marked hypertrophy of gonads in thymusless tadpoles. The thyroid gland presents no abnormal features as to size or quality, as had been asserted by other workers. Special attention was directed to these organs on this account. The thymus glands are not at any stage of development indispensable to life, nor does their removal appear to cause any marked deficiency in the general metabolism of the body. Extirpation does not in any way modify the quality or the rate and degree of development of either gonads or thyroid glands. No modification of internal function was seen to result from absence of the thymus glands.

##### (176) The Activities of the Tadpole Larva of *Amaroucium Pellucidum* Constellatum.

Since the discovery of the chordate affinities of ascidians, a closer similarity in both behaviour and fundamental structure of the ascidian tadpole with chordate animals has been taken for granted than is apparently warranted. Caswell Grave, in the course of experiments, records that it

was a great surprise to find that the tadpole larva of *Amaroucium* does not swim in the fashion of the vertebrate in which a constant position of the body is maintained, but that the body of this tadpole, while swimming, is in constant and rapid rotation on its long axis, clockwise as seen from behind. The mechanism of this movement is not clear, but is caused either as a consequence of an asymmetrical form of the body or by a torsion of the tail during its strokes, or by a combination of both. These tadpoles show a definite reaction to light for a very brief period immediately following their liberation from the parent colony, but react negatively to light during the latter and greater part of the free swimming period. They invariably remain at or near the upper surface of the water during the first part of their free swimming period, but as the time for metamorphosis approaches descend into the lower strata of the water and swim near the bottom. This behaviour has been interpreted to indicate responses to gravity, negative at first, but positive finally. The positive response to gravity is exhibited in varying degrees of definiteness, not at all in a small proportion of tadpoles. Its expression seems to be aided by, but not entirely conditioned upon, the presence of directive rays of light. The viscid contents of the glandular ends of the adhesive papillae are extruded upon the outer surface of the tunic towards the close of the free swimming period and the initial attachment of the tadpole takes place when one or more of these protruding viscid droplets comes accidentally into contact with the surface of a foreign body. Their free swimming period varies in duration from ten minutes to two hours (*Journ. Exper. Zoology*, February 20, 1920).

##### (177) Osteoclasts.

Leslie B. Arey (*Americ. Journ. Anatomy*, January 15, 1920) from a study of developing membrane bone in human and pig embryos, comes to the following conclusions concerning the origin, growth, fate and functions of osteoclasts. (i.) The most revolutionary view put forward is that the osteoclasts (or multinucleate giant cells found in association with developing bone) are not the active, specific agents of bone resorption. This idea has already been elaborated by Howell (1890) and others. Arey maintains that the so-called osteoclasts are merely degenerating masses of fused osteoblasts in most cases. (ii.) They arise to a great extent from old osteoblasts and bone cells, but in the earlier stages of bone development may arise from mesenchymal and marrow connective tissue cells. (iii.) Osteoclasts degenerate and ultimately disappear, sometimes being found in adjacent blood vessels before final disintegration. The evidence he brings forward as regards their origin is as follows. He pictures (i.) all stages between basophilic osteoblasts, then basophilic syncytia, to oxyphilic osteoclasts; (ii.) basophilic osteoblasts

and syncytia in direct continuity with osteoclasts, the staining changing either abruptly or gradually; (iii.) bone cells in all stages of inclusion; (iv.) he shows some figures suggestive also of origin from marrow reticulum or connective tissue cells. As regards their function and fate, he shows how common are vacuolated protoplasm and poor staining, with nuclei which are shrunken and pyknotic, all features almost certainly degenerative in nature. In areas where bone resorption is completed, nests of large osteoclasts are often seen. The osteoclasts are also shown in the blood vessels of the marrow in a shrunken and degenerate state. In a preliminary historical account and in the final discussion the author reviews the various theories and evidence put forward as to the origin of the osteoclasts from those of Kölliker (1873), the pioneer, onwards. Kölliker believed they were derived from osteoblasts by nuclear division. He also devotes considerable space to their function, noting the various facts observed in favour of and against their being the direct agents of bone absorption. They are rarely seen in resorption of calcified cartilage. In osteomalacia and many pathological conditions the lime salts are removed in the absence of osteoclasts, etc. He finally states that there is no direct evidence as to how bone matrix is absorbed, but mentions the evidence put forward as to the action of carbon dioxide in the absorption of bone (Wells) and suggests that bone is absorbed by a double process of decalcification and of digestion of the organic remains.

##### (178) The Normal Relation of Thyroid Glands to Metamorphosis.

Bennet M. Allen records his results of study on the development of the thyroid glands of *Bufo* and their normal relations to metamorphosis as a comparison to some of the recent work done in feeding tadpoles on thyroid preparation or by removing the thyroid *Anagen* (*Journ. Morphology*, September 20, 1919). It is to be noted that colloid material accumulates in the thyroid glands of tadpoles just as the hind limb buds appear. The colloid masses continue to increase in size and number until the fore limbs break through the skin. There is a correspondingly marked increase in size of the thyroid glands. The effects of thyroid extirpation first become evident at this period when normally the colloid begins to accumulate. However, there is a cessation of growth and an actual diminution in size of the thyroid glands at the very time when metamorphosis is most active. This is probably due to the absorption of an unusually large amount of stored colloid at this time, when it would prove most effective. It may be assumed that a certain amount of thyroid secretion must be elaborated before the absorption of the tail can be accomplished. It is certain that limb development and the process of the disappearance of the tail follow the accumulation of colloid in the thyroid gland of *Bufo*.

## British Medical Association News.

### SCIENTIFIC.

A meeting of the Victorian Branch (and simultaneously of the Medical Society of Victoria) was held at the Medical Society Hall, East Melbourne, on April 14, 1920, Mr. G. A. Syme, the President, in the chair. (See *The Medical Journal of Australia*, May 1, 1920, page 424.)

Dr. T. P. Dunhill, C.M.G., read a paper entitled "Some Surgical Notes" (see page 455).

Mr. R. Hamilton Russell said that although he had listened to the whole of Dr. Dunhill's paper with much interest, he would limit his remarks to that section of it which appealed to him most, *viz.*, the portion dealing with fractures and the regeneration of bone.

Mr. Russell recalled the publication of Macewen's work on the repair of bone, the delight with which he had read it and the whole-hearted accord he had given it. The view put forward by Macewen coincided with what he had always suspected, that the periosteum had no regenerative power. For a time he had considered the question as settled, until he realized that there were two schools of opinion in this matter and that the doctrines of Ollier, which attributed osteogenetic power to the periosteum, had a large following. On one occasion, in conversation with Sir Harold Stiles, Mr. Russell had expressed concurrence with the teaching of Macewen, only to find that Sir Harold held the views of the opposing school, which he supported with a skiagram calculated to convince Mr. Russell that the periosteum was osteogenetic. Mr. Russell had observed in this plate that the new bone, regarded as having been produced from the periosteum, "was formed in a very irregular fashion and not in the uniform manner that would have been expected if the osteogenesis were a function of the periosteum. He had been disposed, on account of the very irregularity to which he had referred, to interpret the plate as affording evidence that the new bone was formed from various small bony spicules which had become separated and remained attached to the periosteum. The incident had provided a good illustration of the manner in which two observers might interpret the same appearances in a skiagram in quite different ways.

Mr. Russell said that he had not made up his mind regarding Le Riche's method; he had been astonished by the first case thrown on the screen by Dr. Dunhill, but, at the same time, he felt that he should like to know more details concerning it. He had never found reason to doubt Sir Robert Jones's teaching, that comminuted fragments should be left, although he was prepared to admit that it might require qualification in dealing with war injuries. Mr. Russell quoted the case of a soldier under his care in No. 11 Australian General Hospital, about which he had felt considerable anxiety. In this instance Le Riche's method had been followed, but no bone had been reproduced at all; attempts at grafting were nullified by sepsis, no doubt due to the activation of latent infection in the bone. Eventually union was obtained by sacrificing length and giving the patient a shortened limb.

In the course of some remarks relative to fractures just above the condyles of the femur, Mr. Russell said that he hoped not to witness an extensive application of methods involving callipers. He considered that there was no justification for the use of callipers or bars through the condyles. No difficulty should be experienced in treating this type of fracture by simple extension. The difficulties arose when extension was combined with splints. In fractures of the femur, the amount of extension required was not very great and heavy weights were unnecessary; simple extension, without splints, would meet all requirements in these cases.

Mr. Russell referred to Mr. Hurley's paper in the *British Journal of Surgery*, as a record of most excellent work, but he did not consider the method described therein the best way. Thomas's splint was not, in his opinion, nearly so good as simple, well-designed extension, without any splint, in the treatment of any kind of fracture of the femur. He (the speaker) had seen many late results of fractured femora at this end. All had been treated with Thomas's splints at the base and the results were by no means impeccable. On the whole the simpler methods gave the better results and there was no question of their greater comfort for the patients.

He had heard Dr. Dunhill's paper with great interest and pleasure, combined with a keen regret that the occasion was the last, at any rate for a considerable period, that they would hear Dr. Dunhill.

Dr. J. Newman Morris said that all present would share the regrets expressed by Mr. Russell at the impending departure of Dr. Dunhill. He had followed the paper with great interest throughout, but wished to remark only on the subject dealt with in the first part.

Had Dr. Dunhill any experience of the operation of colopexy advocated and described by Waugh in a recent article in the *British Journal of Surgery*? The writer referred to condemned the removal of any part of the colon, on the ground that such procedure substituted a worse pathological condition for the one it was designed to remedy. The view taken by Waugh in these cases was that the stasis was due, not to kinks, but to the presence of a meso-colon, which should not be there and which, by its presence, placed the bowel at a mechanical disadvantage. The colon should therefore be fixed to the posterior wall of the abdomen and with the support thereby afforded the bowel, its contents were moved much more easily. Waugh had quoted 180 cases, in all of which he claimed good results. Dr. Morris was not impressed with the after results of colectomy. He regarded it as an operation into which shock and sepsis entered as very considerable factors. Colopexy certainly seemed a more rational and physiological procedure than the operation introduced by Lane.

Dr. D. Murray Morton expressed his appreciation of Dr. Dunhill's paper and tendered his congratulations to Dr. Dunhill on the high standard of work reflected therein.

He had for some time past been very much interested in the subject of intestinal stasis. Dr. Dunhill had discussed the possible pathology of distension of the large intestine and on this point he (Dr. Morton) had formed a theory of his own, which might or might not be correct. During one of the post-graduate courses of last year, Sir Harry Allen, in the opening remarks of his demonstration on tuberculosis, had made the statement that every man in the room had, at some time or other, been infected with tuberculosis. Thus many might have suffered from unsuspected tuberculosis of the peritoneum, which in its subsequent cure would lead to wide-spread adhesions. It was not an uncommon experience to operate for abdominal pain, distension and persistent constipation and to find adhesions best explained by a former peritonitis. He considered that an early, unsuspected and subsequently cured tuberculous peritonitis was the most probable antecedent in cases of this nature. He agreed with Dr. Dunhill as to the doubtful utility of dividing abdominal adhesions, as a general rule, but, at the same time, cases arose at intervals in which a judicious division of troublesome adhesions was followed by great relief.

With reference to the remarks of Dr. Morris, Dr. Morton said that he had followed the procedure of plication of the caecum in eight cases, all of which he had been able to follow up; the results were good. Waugh's operation appealed to him as being probable more effective than plication, although as yet he had had no personal experience of it.

Dr. C. Gordon Shaw, D.S.O., remarked that in any discussion on the repair of bone, the importance of the presence or absence of sepsis must always be borne in mind. If it were presumed that osteophytes were stripped from the surface of the bone with the periosteum and that bone regeneration proceeded from such osteophytes, the occurrence of sepsis would involve their death and failure to take part in osteogenesis. The association of sepsis and ununited fractures was a common enough observation; sepsis very frequently destroyed osteogenetic power, whether it were considered to reside in the periosteum or in the bone. Many of those present must have had occasion to deal with ununited fractures of the femur, in which the ends of the opposing fragments were covered with scar tissue, and must have noted that it was not until all sepsis had subsided and the scar tissue had been removed, that any headway was made in the direction of obtaining bony union. Bone-grafting operations were seldom necessary; union would almost invariably follow when the fibrous tissue was cleared away and the septic process completely checked.

Dr. Shaw could not agree with Mr. Russell's impressions of the results attained in fractures of the femur in war work.



If a large series were considered, it would be found that the proportion of bad results was extremely low. From the point of view of alignment and also absence of shortening, the efforts of war surgeons in dealing with fractured femora were, in his opinion, attended by very good results. Those cases with which Mr. Russell had had to deal in the base hospitals, were naturally the worst injuries and possibly that fact would account for Mr. Russell's disappointment in his estimate of the results obtained in these cases. In entering a defence for the Thomas's splint, Dr. Shaw said that, in his experience, the results obtained by its use were good; failures had undoubtedly occurred, but he thought that they were to be attributed to such factors as the severity of the injury, poor resistance to infection and possibly the personal equation among the surgeons in charge, rather than to the method.

Dr. Shaw expressed the very great interest with which he had followed that section of Dr. Dunhill's paper dealing with abdominal surgery. Some years ago he had devoted considerable study to the question of pain in the right iliac fossa, associated with movable colon; he had examined a number of patients in this condition by means of X-rays and bismuth meals. All were the subjects of constipation; many were found to have a large, movable caecum; others showed delay in the ascending colon, sometimes associated with prolapse of the hepatic flexure. He had been fortunate enough to have had opportunity of verifying these findings at operation in many instances, but he was frequently at a loss for treatment. In some he had plicated the caecum and ascending colon; in others he had anastomosed the ascending colon to the transverse colon, with the idea that the dropping of the ascending and transverse colons had led to prolapse and "kinking" of the hepatic flexure. Such a kink in the hepatic flexure was often a very difficult condition to straighten.

A distinct cure had followed the anastomosis he had indicated in some instances; in others there was a rather less degree of benefit, but in some there was no improvement at all. The method was not ideal, but it was the best he knew. The only alternative was excision. He had considered that anastomosis ought to be given a chance. If colopexy would meet the case, it certainly seemed a much more simple and surgical procedure.

In conclusion, Dr. Shaw tendered his thanks to Dr. Dunhill for his highly interesting paper. He had been privileged to work a great deal with Dr. Dunhill in recent years and he felt that he owed him a great deal. In many ways Dr. Dunhill's departure was a great loss to the profession in the State.

Dr. H. Douglas Stephens wished to express his appreciation of a paper which he had found full of interest in every branch. Dr. Dunhill's paper was thoughtful and scientific and in both respects on a par with all his work.

He would direct the few remarks he had to make to one point and that was the question of constipation in relation to the anatomical formation of the ileo-caecal junction and the ascending colon in infancy. Even in a very young infant, of six to eight months, with ileo-caecal intussusception, there was, as a general rule, a history of preceding constipation. At operation it was invariably found that the caecum and ascending colon were very loosely attached to the parietes. Thus it would appear that in these cases, the bowel, in its peristaltic contractions, had no *point d'appui*. Infants with the anatomical peculiarity he had indicated were pre-eminently the subjects for intussusception. Although the variation was a pre-natal condition, it was uncommon to meet it in the ordinary routine *post-mortem* examination. Such intussusceptions were very prone to recur. He recollected one which recurred three times in the first twelve months and, in that particular instance, he finally sutured the ascending colon to the lateral lumbar wall. There had been no further recurrence, but due allowance had to be made for the fact that the child soon outgrew the period of greatest susceptibility to intussusception. Dr. Stephens asked whether this infantile condition, this unduly long mesentery to the ascending colon, was a factor in the production of certain types of constipation in adults.

Mr. G. A. Syme voiced his very great regret at the impending departure of Dr. Dunhill, whose address of that evening had the effect of emphasizing the loss the profession in Melbourne was about to sustain.

Dr. Dunhill had covered a good deal of ground and had raised several debateable questions. One remark he (the speaker) could heartily confirm. It was that hurried work was bad work. There had been a tendency of late to emphasize the advantages to be gained by rapid operating; no doubt it was upon occasions imperative, but as a general rule he could endorse Dr. Dunhill's dictum. Mr. Syme expressed himself as in complete agreement with the principle laid down by Dr. Dunhill that when the abdomen was opened, it should be thoroughly explored. The truth of this was borne out by his own experience. He had recently come across a case in which the abdomen had been "explored" through an incision 3.75 cm. long! The possibility of the presence of a duodenal ulcer could not be properly investigated through a McBurney incision of this length.

Regarding intestinal stasis and the operative measures that had been undertaken in connexion therewith, Mr. Syme had always entertained considerable doubt. He had seen Lane operate; he had seen the patients afterwards at shorter and longer intervals; he had known patients go from Melbourne to be operated upon by Lane; and he knew their condition on their return. From what he had seen and observed, he could not but feel very doubtful of the utility of Lane's methods. In Hirschsprung's disease the circumstances were different. This condition was a definite entity and complete excision of the colon was the only adequate measure.

There was no doubt that the condition of incisional hernia and widespread abdominal adhesions, discussed by Dr. Dunhill, was the *bête noir* of the surgeon. Mr. Syme confessed that he did not know what could be done in these cases.

The discussion had turned on the very vexed question of bone regeneration and a definition of terms seemed to be necessary. It appeared that the two schools did not use the term periosteum in the same way. The followers of MacEwen limited it to the most superficial layer only; the adherents of the Oller teaching included in the term periosteum more or less of the surface of the bone. Mr. Syme himself was convinced that a layer at the surface of the bone regenerated; whether it be called bone or periosteum mattered little. He agreed with Dr. Shaw that sepsis or extreme severity of injury might destroy the regenerative elements.

The treatment of fractures was another controversial question, but it should be remembered that where one man obtained good results with one method, another man would get equally good results with a different mode of treatment. He had been rather surprised that none of the speakers had commented upon Dr. Dunhill's remarks with reference to specialization. In the surgery of the war remarkable results were achieved by segregation of types of cases and concentrated study of such types in special hospitals for head surgery, chest surgery, etc. Mr. Russell himself was an illustration in point; he had developed his methods of treating fractures by careful and specialized study.

Mr. Syme saw great difficulty in the application of the method advocated by Mr. Russell in cases with extensive laceration of soft parts. He was in agreement with Mr. Russell in his disapproval of the practice of driving foreign substances through the condyles, but did not see the same objection to the use of callipers. In some instances callipers might offer the only solution.

In conclusion, Mr. Syme added a few remarks relative to the toxic adenoma described by Dr. Dunhill and indicated that he could confirm Dr. Dunhill's description from his own experience. He had met with various instances of thyroid adenomata which had existed for some years without any symptoms, but which had subsequently led to toxic cardiac symptoms. All patients with thyroid carcinoma in his experience had given a history of pre-existing goitre or nodules in the gland substance. Both types of case provided reasons for the removal of thyro-adenomata in their early stages.

Dr. Dunhill, in reply, said that the use of "ice-tong" callipers in fractured femora had been limited to cases of dire necessity and that they actually had been applied in only a small proportion of cases. With regard to simple extension, a certain amount of movement of the patient was necessary for the performance of the bodily functions; for this reason some form of support in the shape of a splint seemed desirable.

He thanked all present for their very kind expressions and sincerely hoped that the occasion would not be the last that he would meet the Victorian Branch.



## MEDICO-POLITICAL.

A meeting of the Victorian Branch was held at the Medical Society Hall, East Melbourne, on May 5, 1920, Mr. G. A. Syme, the President, in the chair.

The President explained that the Federal Committee had considered at its meeting in February, 1920, the question of defraying the travelling expenses of members attending meetings of the Committee. Hitherto the Federal Committee had no power to pay these travelling expenses and the burden had therefore fallen on the members themselves. It was now proposed to modify the constitution by the alteration of Clause 5, to enable the Committee to pay the travelling and personal expenses of its members. Clause 5 authorized the Committee to collect from the several Branches an annual sum sufficient for its needs.

Dr. A. V. M. Anderson moved:—

That it be an instruction to the representatives of the Victorian Branch in the Federal Committee to support the proposal of the Federal Committee that Clause 5 of the constitution of the Committee be altered by the substitution therein of the word "including" for the words "other than," whereby the clause will read:—

To meet the general expenses of the Committee, including the travelling and other personal expenses of the members, the Treasurer of each Branch shall, in accordance with the by-laws of the Branch, pay on the demand of the officer of the Committee duly appointed by it to receive the same, such sum or sums as the Committee may require, provided that the total so payable in any year shall not exceed a sum equal to two shillings per member of the Branch.

The motion was seconded by Dr. J. Ramsay Webb and was carried unanimously.

A special general meeting of the Queensland Branch was held at the B.M.A. Rooms, Adelaide Street, Brisbane, on May 4, 1920, to consider the question of the milk supply, in view of the proposed alteration of delivery hours. The President, Sir David Hardie, took the chair.

Sir David Hardie described the sources of the milk supply of Brisbane. The persons employed by the distributors had recently appealed to the Arbitration Court for a regulation of working hours. An award dated November, 1919, had fixed the working hours from 4 a.m. to 5 p.m. on all days save Saturdays, Sundays and public holidays, when the working hours were between 4 a.m. and noon. This would mean that there would be no afternoon delivery of milk on Saturday, Sundays or public holidays. The award had been ignored by the fresh milk dairymen, but had been kept by the chilled milk vendors. More recently the Carters' Union had approached the Arbitration Court to force the fresh milk sellers to abide by the award. The Judge had made a new award according to which the hour of commencing delivery was to be 5 a.m. and there were to be no afternoon deliveries on Saturdays, Sundays and holidays. Owing to protests having been made, the Judge had suspended the operation of the new award until further evidence had been brought before him.

Dr. A. Jefferis Turner stated that the position of the fresh milk vendors, if no afternoon delivery were permitted, would be serious. The milk would either have to be thrown away or given to the chilled milk sellers. It was very important to have a constant supply of fresh milk, which was much better than any dried preparation. The effect of the award would be to increase the use of dried preparations. Chilled milk could be kept for a long time, but there were no facilities in the average house for this. In the summer time the housewife could scald the milk twice in the day, but this was bad for the infants. However, the mothers would not always take the trouble. It was not much use delivering milk twice in five days and only once on the other two. Such an arrangement was scarcely an improvement on a single delivery every day of the week. If the proposed alteration in the hours of delivery were introduced, many families would not get milk before 8.30 a.m. or later. Infants, as well as adults, would require it before that time. The only alternative would be to use stale milk that had been

kept at a high temperature, at all events in the summer. This would make infant feeding more difficult than it was at present. He had no objection to the number of hours of working, but he did object to the compulsory days off duty. He held that the matter of time off duty could be left for amicable arrangement between the employers and the employees. He moved:—

That the Queensland Branch of the British Medical Association records a strong protest against regulations interfering with the early morning delivery of milk and prohibiting an afternoon delivery on certain days of the week, knowing that such regulations will in many cases seriously affect the health of infants, young children and invalids and tend to increase sickness and mortality, more especially among poor people, who cannot afford to keep a cow or an ice chest.

Dr. Alex. Marks, C.B.E., D.S.O., seconded the motion.

Dr. E. Sandford Jackson moved as an amendment:—

That milk straight from the cow should be delivered twice a day.

Pasteurization and chilling frequently failed to preserve the milk. The fact that the inspection of dairies was more efficient in urban than in rural districts accounted for the absence of keeping qualities of milk from the country. It was usually the poor man who was made to suffer. Even if an ice chest were used, the milk would not last, because the temperature of the milk in the ice chest was not lower than 4° C.

Dr. J. Lockhart Gibson stated that a similar attempt to restrict the hours of delivery had been made some years ago. A strong deputation from the Branch to the Home Secretary had resulted in the matter being dropped.

Dr. Sandford Jackson withdrew his amendment and Dr. Jefferis Turner's motion was carried unanimously.

It was resolved that the President and Dr. Jefferis Turner should wait upon the Home Secretary to present the resolution and should give evidence when the matter was again under consideration in the Arbitration Court.

At a special meeting of the Council of the Victorian Branch held on May 5, 1920, the following resolution was adopted:—

That this Council strongly supports the New South Wales Branch in its action regarding interned alien enemy practitioners and in the specific instance of Max Herz.

## Medical Societies.

## MELBOURNE HOSPITAL CLINICAL SOCIETY.

The annual meeting of the Melbourne Hospital Clinical Society was held on April 30, 1920, at Scott's Hotel, Melbourne. The principal business was the election of office-bearers for the ensuing year. The following were appointed to the several offices:—

*President:* Mr. Basil Kilvington.

*Honorary Secretary:* Dr. F. B. Lawton.

*Members of Committee:* Mr. W. G. D. Upjohn, O.B.E., Dr. H. Hume Turnbull, Mr. T. E. L. Lambert.

After the formal business was concluded, the members adjourned to dinner, at which function the chief guest was Sir Henry Maudsley, K.C.M.G., C.B.E.

Mr. Basil Kilvington referred to the long and honourable association of Sir Henry Maudsley with the honorary staff of the Melbourne Hospital. Sir Henry was now about to retire from the active staff and it was a fitting occasion on which to present him with a tangible token of their regard and affection.

He had received apologies for inability to attend from the following gentlemen: Sir Charles Ryan, K.B.E., C.B., C.M.G., Dr. R. A. Stirling, Dr. W. Moore, Dr. G. T. Howard, Dr. J. W. Springthorpe, Dr. W. R. Boyd and Mr. B. T. Zwar.

Mr. Kilvington called on Dr. R. N. Strong to make the presentation to Sir Henry Maudsley on behalf of the staff of the Melbourne Hospital.

Dr. Strong, in a happily phrased speech, asked Sir Henry Maudsley to accept from his colleagues on the staff of the hospital a present of silver-ware. Unfortunately, the gift was not yet completed, but it was to be inscribed: "To Sir Henry C. Maudsley, K.C.M.G., C.B.E., M.D., Lond. et Melb.,

F.R.C.P.; a token of esteem from his colleagues on the staff of the Melbourne Hospital."

They had felt that they could not let the occasion of Sir Henry's retirement pass without expressing their affectionate appreciation of his long and efficient service as physician, friend and teacher. It was also his duty to request the gathering to honour the toast of the health of Sir Henry Maudsley, a toast which needed no words of his to commend.

The toast was cordially supported by Dr. J. E. Nihill, Mr. F. H. Langlands and Dr. R. R. Stawell. In speaking to the toast, Dr. Stawell made some thoughtful observations upon the indications of impending change in the relationship of the medical profession to the public.

The manner in which the toast was received by those present was an eloquent expression of the affectionate esteem in which they held Sir Henry Maudsley.

Sir Henry Maudsley thanked the members sincerely for the very kind feelings which had prompted their gift and demonstration of good-will toward himself. He was, indeed, unable to express his gratitude. That he was retiring from active work at the hospital was not a pleasant thing to contemplate and some feeling of sadness was inevitable. However, he had always held that there should be a retiring age; as a man advanced in years his habits of thought became more and more fixed. It was but the proper order of things that he should make way for the younger man, replete with the enthusiasm of his youth, with his wider vision and capacity for clinical research.

He was very loath to think that retirement from the active staff precluded him from any further usefulness in respect to the Melbourne Hospital and he sincerely hoped it did not. He spoke at some length in delightful vein, to the evident entertainment of his audience and concluded with a further expression of his heartfelt thanks for the honour accorded him by the Society.

Dr. John Gordon, C.M.G., then proposed the toast of "Our Guests," the members of the staff of the Melbourne Hospital who had recently returned from service overseas, viz.: Dr. R. H. Strong, Mr. W. G. D. Upjohn, O.B.E., Mr. T. E. V. Hurley, C.M.G., Mr. W. A. Hailes, D.S.O., Mr. H. A. S. Newton, Dr. F. B. Lawton, O.B.E., Dr. S. W. Patterson, Dr. N. H. Fairley, O.B.E., Dr. P. A. Stevens, Dr. W. W. S. Johnston, D.S.O., M.C.

Response was made on behalf of the guests by Mr. Alan Newton and Dr. W. S. Johnston.

#### THE OPHTHALMOLOGICAL SOCIETY OF NEW SOUTH WALES.

A meeting of the Ophthalmological Society of New South Wales was held in the Sydney Hospital on February 4, 1920, Dr. Gordon MacLeod, the President, in the chair.

The President read a letter which he had received from Dr. Lockhart Gibson, of Brisbane, asking him to call the attention of members to the forthcoming Congress and to urge the Society to support it with papers or suggestions as to subjects for discussion.

The Secretary was instructed to acknowledge Dr. Gibson's letter.

Dr. Cyril Shepherd reported that he had removed the growth from the case shown at the last meeting and that it proved to be an epithelioma (see *The Medical Journal of Australia*, February 28, 1920, p. 200).

Dr. E. A. Brearley exhibited a patient of 19 years. The vision had been very defective as a child, had then improved, but had failed again during the last twelve months. The vision of both right and left eyes was  $\frac{1}{60}$ , not improved by glasses. There was aniridia with unusual lens opacities. The family history contained nothing of importance to the case.

His second patient was 23 years of age. There had been a sudden failure of vision in the right eye 18 months previously with what looked like venous thrombosis in the fundus. The Wassermann test was negative. The urine was clear and contained no casts. All the other systems were apparently normal. He had treated the patient with iodide of potash and atropine. He had seen the patient at long intervals after the first three months. About nine months ago there appeared a fan-shaped structure coming forward from the disc above and below, with vessels branching as in the mesentery, with fine connecting loops at the extremities.

These had shrunk up to present condition and the fundus lesions had cleared up.

Dr. Brearley asked for an opinion as to what treatment would be advised.

The opinion of the majority of the members was that a needling should be done in the first case.

Dr. E. Temple-Smith showed two cases of plastic operation on the lids, which proved interesting to members.

He also showed an old lady on whom he had operated for glaucoma of both eyes by the insertion of a silk drain beneath the conjunctiva with very good results.

Dr. Guy Antill-Pockley showed a case of a growth on the sclera which had formerly been seen by the members. The condition was unaltered. Upon inquiry it was stated that the patient had not had radium treatment.

Dr. Pockley also showed the following case: P.M., *et.* 7, a female. Six months ago the mother first noticed that the right eye was becoming prominent. Four months ago the vision was first affected; the child complained that "everything looked grey." Three months ago there was no perception of light with the right eye. There had been no pain, no nasal trouble and no inflammatory trouble.

The child was seen first about a fortnight ago and the condition had remained practically unaltered. The mother stated that the condition was much more marked at some times than at others, although it was always present.

There was marked proptosis of the right eye, not reducible by pressure, enlargement of the palpebral fissure and no interference with the ocular movements. There was slight strabismus. No pulsation could be felt. There was nothing abnormal to be felt in the orbit. Examination with X-rays gave negative result. There was no megalocornea. There had been no rise in tension since she was first seen. The right pupil only acted consensually. Posture did not affect the degree of proptosis. The disc was greyish, with evidence of swelling particularly above and below; apparently in a condition of secondary optic atrophy.

Examined by retinoscopy the total hyperopia was found to be 4.5 D in the right eye and 0.75 in the left. There was nothing in the neck to suggest any interference with the sympathetic system.

Dr. Pockley said that he thought the case sufficiently interesting to show as regards the problem of causation. He felt that there was almost certainly some neoplasm or cyst in the orbit causing the condition, but if so, it was difficult to explain why it should leave the external ocular muscles working without interference. The lessening of the antero-posterior diameter of the globe as shown by retinoscopy pointed to pressure behind the globe. There was nothing which threw any shadows to X-rays and the accessory sinuses were clear, so far as the X-rays showed.

In the opinion of members there was a new growth in the orbit. If it did not subside under treatment, a Krönlein's operation should be done.

Dr. S. H. Hughes showed a specimen of melanotic sarcoma.

Dr. R. H. Jones showed a man, *et.* 60, who had been struck in the left eye by a piece of wood two months before. The lens was dislocated obliquely, the inner edge coming forward to the cornea. The pupil was fully dilated and was not reduced by eserine. The tension was about + 2.

The eye was not painful, but was a little uncomfortable at times. The question was whether the eye should be left alone or an attempt made to remove the lens.

The majority of the members expressed the opinion that an operation should be done.

#### University Intelligence.

##### THE UNIVERSITY OF SYDNEY.

A meeting of the Senate of the University of Sydney was held on May 2, 1920, at University Chambers, Phillip Street, Sydney.

The Vernon Memorial Lectureship Committee was appointed as follows: The Warden, Professor Warren, Mr. A. D. Craig, Mr. J. F. Hennessy, Mr. J. Sulman, Professor Wilkinson, Mr. J. Nangle and Mr. J. J. C. Bradfield.

Professor Welsh was authorized to accept the position of Honorary Consulting Pathologist at the Sydney Hospital, to which office the Board of that Hospital had invited him.

A letter was received from the Perpetual Trustee Company

as executor in the will of the late Sir Thomas Anderson Stuart, notifying the legacy of a marble bust of the testator. The bequest was accepted.

The following resolution was passed on the motion of Professor Wilson:—

That Professors Emeritus shall be members of the Professorial Board and of the Faculty to which they belonged as active professors; and that the by-laws be altered so as to give effect to this resolution.

On the recommendation of the Professorial Board it was resolved:—

- (1) Science Research Scholarships of the value of £150 be awarded for one year to the following: Edith J. Angellnetta, B.Sc., Eileen M. Broughton, B.Sc., Marie Bentivoglio, B.Sc., and T. Iredale, B.Sc..
- (2) That Science Research Scholarships of the value of £100 for one year be awarded to the following: Mary M. Bingham, B.Sc., Dorothy R. Russell, B.Sc., Margaret H. O'Dwyer, B.Sc..
- (3) That Professor MacCallum be appointed an additional delegate of the University of Sydney at the conference of Australian Universities.

The following recommendations in regard to the Diploma of Public Health, contained in a report from the Faculty of Medicine, were adopted:—

That (a) the infectious diseases wards of hospitals at Perth, Adelaide and Brisbane be approved as "Hospitals for Infectious Diseases" within the meaning of By-law 6 (b); (b) courses of practical instruction, given by a Commonwealth or State veterinary surgeon of Perth, Adelaide or Brisbane, in those diseases of animals which are transmissible to man, be approved, for the purpose of By-law 5 (iii.) (b); (c) the Chief Quarantine Officer of the Commonwealth of Australia Quarantine Service, in conjunction with the State Medical Officer of Health of Perth, Adelaide or Brisbane, as the case may be, be appointed as a Medical Officer of Health for the purpose of By-law 6 (a).

Furlough House, at Narrabeen, New South Wales, is a rest home for the wives of soldiers who have served with the Australian Imperial Force and their children. During the course of the war this home proved of inestimable value to many women. Admission is restricted to the dependants of returned soldiers and the women are kept in the home for a period of 14 days. This home receives no Governmental subsidy or support and is the result of pure benevolence. In order that the inmates may not be exposed to unnecessary risk, a preliminary medical examination is required of every woman and child before admission. Up to the present the medical examination has been conducted gratuitously by a single practitioner in Sydney. It is felt that this arrangement is an imposition on this practitioner, inasmuch as upwards of 50 individuals have to be examined each fortnight. Mrs. Day, who is responsible for the management of the home, has suggested that it would be better if the examination could be undertaken locally by general practitioners throughout the State. The President of the New South Wales Branch of the British Medical Association has expressed his approval of the proposal. Members are requested to undertake this small work without asking for payment. Examinations are required within 24 hours of the admission of the patient.

We regret to announce the death of W. B. Nisbet, of Townsville, which took place on May 7, 1920.

Dr. A. H. Tebbutt has removed his laboratory and residential from 211 Macquarie Street to "Craignish," 185 Macquarie Street, Sydney.

## Correspondence.

### MEDICAL EDUCATION.

Sir: The object of education is twofold: The training of the mental faculties and the acquisition of knowledge. These two are inseparable, but the greater stress should be laid on the former.

The object of medical education is to make efficient practitioners. Therein it differs from university education

in arts and science, whose object is culture. An arts degree should be the stamp of a mind that has been trained and cultivated by the study of literature and the humanities. A science degree should be the sign, not only of a wide knowledge of science, but of the possession of a scientific mind. But a degree in medicine should be the distinction of a mind qualified, or endowed with the power of qualifying himself, for the treatment of his fellow men in sickness. Its object is practical. To a medical man as to others the possession of culture is an advantage. Let him have as much as possible, but the shortness of human life and the immense variety of study necessary for the making of an efficient practitioner, negative the inclusion in the medical curriculum of any subject purely for the sake of culture. Fortunately, the curriculum itself touches on such a wide range of knowledge and mental activity that, when properly taught, it should produce practitioners who are not only efficient but cultured also. In other words the medical man must know his job; and to learn to know his job properly is in itself a liberal education.

Five years may seem too short a time in which to include the studies of an ideal medical course, but it is a large fraction of a young man's life and often a severe strain on the financial resources of his parents. In our anxious endeavour to improve the education of our medical students we must be careful not to cut off the supply. A sixth year spent as resident medical officer at a recognized hospital at the termination of the medical curriculum would be a great advantage; but I do not think we can extend the length of the curriculum itself.

The problem is then: How much and what should be packed into these five years? When I consider the curriculum through which I passed myself (I qualified in 1884), it seems to have been full enough for average human capacity. But since then the sciences on which medicine and surgery are based have grown vastly. Subjects taught of old have grown in scope, subjects then hardly known have now grown to a formidable size and these additions are of the greatest importance for the education of an efficient practitioner. There seems to me no possibility of including the teaching of this new knowledge without lightening the curriculum by the exclusion of some of the subjects formerly taught, for I see no reason to believe that human capacity has increased commensurately with our increase of knowledge. To secure the greatest efficiency in the product we must cut away portions of the curriculum, or must antedate them to that portion of the student's education which precedes his matriculation.

How much may we expect from the secondary schools? I myself entered the university with a fair knowledge of inorganic chemistry and I see no reason why what was then the exception should not now become the rule. I do not refer to sham knowledge acquired by rote out of a schoolbook, but to real knowledge based on personal experiment as well as reading. The schoolboy who is to study medicine, should himself perform chemical experiments in the laboratory and undertake simple analyses; not that he is to be trained to be an expert in analysis, but that he may understand its principles. This is well within the power of a properly-equipped school; many boys have done much of it in their own homes in their spare hours. All boys should have some training in elementary physics, accompanied by practical work in the laboratory. I say all boys, for anyone, however well educated otherwise, who has never learnt any elementary physics, will in this respect remain a fool his whole life long. Botany should also be taught as an introduction to biology peculiarly suited to schoolwork. Boys should also be instructed in elementary anatomy and physiology. They should know something of the bodily organs of some vertebrate, such as the frog, or of some small mammal, by actual inspection and should be taught something of their functions. More than this I should not expect of the schools, but this is not too much. If any have not attained this standard, it is rather urgent that they should do so. If it be objected that to do as much as this is to overcrowd the school curriculum, I would reply that many boys, with no taste that way, are wasting the best part of their school years in falling to acquire a knowledge of the Latin language, which noble tongue (which I admire) is no longer the necessary foundation of a higher education. One result of the introduction of elementary science in schools should be to encourage boys with a taste for science to enter the study of medicine and



to fortunately discourage those who have no such taste, from entering this walk of life.

Let us now consider some of the subjects which have been or should be added to the medical curriculum since my day, when I studied for the degrees of the University of London. The science of medicine, which was then already large, has acquired whole new territories; for instance, the whole subject of immunity and the reaction of the body to the living causes of disease, which many of us find so perplexing and in which careful and accurate tuition is so necessary; and the chemical changes in the body which take place during disease, including the whole subject of internal secretions. Great advances have occurred in our knowledge of neurology, cardiology and hæmatology, though much yet remains obscure. No medical course is complete without some knowledge of the psycho-neuroses and some instruction in psychiatrics. Of the most practical importance is pædiatrics, especially the diseases of infancy. At present a medical man may be competent to deliver a woman, and yet less able to advise her in the feeding of her infant than a baby clinic nurse. This is inefficiency and the result is infantile deaths. I do not pretend to a complete enumeration, but perhaps these instances will suffice. Similarly in surgery the immense extension in regional surgery need only be mentioned. The department of orthopædics is a province of great importance, almost the whole of which is new. In gynaecology, where the general practitioner has to bear an immense responsibility, the advances have been equally great.

These are extensions of old knowledge, but we have also whole new sciences in which our students must be instructed. Bacteriology must be taught and can only be taught by laboratory work. Not that all medical men should become expert bacteriologists; this is neither possible nor desirable, but they must know the principles of bacteriology and these can only be learnt by practical work. They must know how and when to invoke the assistance of the laboratory and exactly how far this is able to help them. Similarly with the new science of medical protozoology. Bio-chemistry is a new science of ever growing importance. The medical applications of electricity, X-rays and radium were all unknown in my student days.

The diseases of the eye, ear, nose, throat and teeth were not taught us. These were considered extra subjects which did not concern the general practitioner. Whether that was sound policy I doubt. Certainly it cannot be justified at the present day. No medical man is properly equipped for diagnosis unless he has been trained to inspect the fundus of the eye, the tympanic membrane and the larynx. Should he practise in a city well provided with specialists, he ought to know at least when to call in the assistance of a specialist. But if, as often happens in Australia, he is beyond the reach of specialist help, the welfare of his patients will often depend on his possessing some knowledge of the disorders of these special organs. As a result of the deplorable ignorance of the ordinary practitioner in the estimation of even simple cases of errors of refraction, an inferior order of practitioners known as ophthalmic opticians has sprung up and is now obtaining State recognition. This has arisen as the natural result of the neglect of a part of our medical education. The profession may protest, but its protest is not likely to improve a situation that has arisen by its own default. By including diseases of the teeth, I do not propose that a medical man should undertake the work of a dentist, but he should know enough to be able to work in co-operation with a dentist and to prevent to some extent, the deterioration of children's teeth. For, in truth, there are no diseases of any special organs, which do not affect the well-being of the whole bodily system, just as there are no localized ailments which do not depend somehow or to some extent on the general condition of the patient. It is the duty of the medical man, whether general practitioner or specialist, to know something about the whole human body, not artificially excluding any part of it.

No longer is the medical man regarded simply as a healer of disease. The public expect, and he will himself admit, that the prevention of disease is part of his duty. Partly this concerns the individual, but partly also it deals with the whole community in bulk. State or preventive medicine, with its branches of epidemiology, sanitation, etc., has grown into a new department of medicine already large and always increasing. It is not an extra nor a specialty, but concerns every individual member of the profession and must be

taught to each and all, whatever else it may be necessary to omit.

How are we to make room for all these new and necessary subjects? By lightening the curriculum by the exclusion of all unnecessary subjects. Some things will have to go and I will indicate what I think they are. Botany I would exclude altogether, with the exception of a small remnant in the shape of plant cytology and a knowledge of the lower fungi (moulds), which should be taught in conjunction with zoology. It is no business of the medical man to know the difference between the *Ranunculaceæ* and the *Rosacææ*. It is true that some knowledge of botany and some acquaintance with practical geology (my ignorance of which I often deplore), add to the interest of life. But they do not add to the efficiency of a medical practitioner, who has no longer to collect his simples in the fields. If the medical man wishes to study them, let him do so as a recreation in his spare time.

I was a prizeman in zoology, which was my favourite science relinquished with regret. What I learnt of it added to my enjoyment of life, but not, with the exception of those parts to be presently mentioned, to whatever value I may have as a medical practitioner. Zoology I would cut down to the bone, preserving only those parts of direct value to the medical student, whose time should not be wasted in the dissection of crayfish and cockroaches, fascinating in their interest as these animals may be. It is not without reason that I commenced by insisting that we cannot afford to include anything in the medical curriculum for the sake of culture. I would retain only some instruction in the protozoa both as an introduction to cellular physiology and for their importance in parasitology, the essentials of helminthology and some instruction in vertebrate embryology. The rest of zoology, invertebrate and vertebrate, must go. The time I spent in learning the differences between placental and marsupial mammals, or between the *Sauropsida* and the *Ichthyopsida* was, as a part of the medical curriculum, time wasted.

Physics and chemistry cannot be cut down. They must even be extended, but they must be taught with a definite medical purpose. It is those parts that concern medical practice, together, of course, with the fundamental principles, that are necessary. Inorganic chemistry should, as I have already insisted be sufficiently taught at school, thereby relieving the medical course considerably. The principles of chemistry will need to be taught, organic chemistry, its application to physiology and so forth.

Much time and wasted labour might be saved, I believe, in anatomy by cutting out much mere memorizing, "cram" work, which conveys no real knowledge and is soon forgotten. We, for instance, wasted much time in "learning the bones," by which I do not mean that osteology is of no value. Systematic lectures in anatomy should be reduced to a minimum, but as much dissection done as opportunity permits. The only valuable knowledge of anatomy, for the most part, is pictorial memory and can be acquired only by dissection.

Of physiology I can speak only with hesitation, for, alas, I remember so little. But I think we were taught a good deal, for instance, in "muscle-nerve" work, which had then and still has no direct application in medicine. In this illustration I may be wrong, but I maintain that where there is so much to be learnt, we should stick to essentials, the object being to make efficient practitioners, not physiologists.

We should relieve the course by abandoning *materia medica*, which no more concerns medical practitioners than the making of hospital bedsteads. Let other experts see to this; it is our duty only to use the finished article and to form our opinion of its usefulness. We should only retain that comparatively small part of drug therapeutics which is really useful.

A certain amount of instruction in forensic medicine is necessary, but we should retain only those parts that are of practical importance to medical men; among these an expert knowledge of toxicology is not included.

I have been pleased to see that this scheme of medical education has been approached in some parts, though not in all, by the valuable report printed in *The Medical Journal of Australia* for March 27 last. With the radical change proposed in this report in making the courses of chemistry, physics, physiology and anatomy run longitudinally through the year, I heartily agree. We took these subjects transversely as in a hurdle race, each hurdle representing an exam-

ination, after which the subject learnt was largely forgotten, and a start made on a new subject in disconnected fashion. The knowledge taught us should rather have been mentally represented as skates strapped to the feet and never removed. For the medical man stands always on slippery ice and any slip on his part may mean human suffering or human death.

Yours, etc.,

A. JEFFERIS TURNER, M.D., Lond., D.P.H., Camb.  
Brisbane.

April 19, 1920.

[Correspondents are requested to express their views briefly. It is rarely possible to find space for so long a letter as that of Dr. A. J. Turner. Moreover, it is in the interests of the writers to be concise, as a short letter will be read and understood. The essential points buried in long dissertations are often lost.—Ed.]

### Medical Appointments.

For the purposes of the *Factories and Shops Acts*, Dr. William Ostermeyer (B.M.A.) has been appointed a Certifying Medical Practitioner at Carlton, Victoria.

Dr. A. L. Giblin (B.M.A.) has been appointed Public Vaccinator for Bright, and Dr. N. M. Simpson (B.M.A.) for Rupanyup, Victoria.

It is announced that Dr. A. M. Wilson (B.M.A.) has been appointed Honorary Obstetrical Surgeon to the Women's Hospital, Melbourne.

Dr. W. A. McDonald (B.M.A.) has been appointed Honorary Dermatologist to the Liverpool State Hospital and Asylum, New South Wales.

Dr. A. R. Haynes has been appointed District Medical Officer and Public Vaccinator at Broome, Western Australia.

### Medical Appointments Vacant, etc.

For announcements of medical appointments vacant, assistants, locum tenentes sought, etc., see "Advertiser," page xxvii.

University of Sydney: Lecturer in Obstetrics.

Department of Mental Hospitals, Sydney: Two Junior Resident Medical Officers.

Department of Public Health, Queensland: Health Officer.  
Alpha Hospital, Queensland: Medical Officer.

### Medical Appointments.

#### IMPORTANT NOTICE.

Medical practitioners are requested not to apply for any appointment referred to in the following table, without having first communicated with the Honorary Secretary of the Branch named in the first column, or with the Medical Secretary of the British Medical Association, 429 Strand, London, W.C.

Branch.	APPOINTMENTS.
<b>VICTORIA.</b> (Hon. Sec., Medical Society Hall, East Melbourne.)	All Friendly Society Lodges (other than the Grand United Order of Oddfellows and the Melbourne Tramways Mutual Benefit Society), Institutes, Medical Dispensaries and other Contract Practice. Australian Prudential Association Proprietary, Limited. Mutual National Provident Club. National Provident Association.
<b>QUEENSLAND.</b> (Hon. Sec., B.M.A. Building, Adelaide Street, Brisbane.)	Australian Natives' Association. Brisbane United Friendly Society Institute. Cloncurry Hospital. Stannary Hills Hospital.

Branch.	APPOINTMENTS.
<b>SOUTH AUSTRALIA.</b> (Hon. Sec., 3 North Terrace, Adelaide.)	Contract Practice Appointments at Renmark. Contract Practice Appointments in South Australia.
<b>WESTERN AUSTRALIA.</b> (Hon. Sec., 6 Bank of New South Wales Chambers, St. George's Terrace, Perth.)	All Contract Practice Appointments in Western Australia.
<b>NEW SOUTH WALES.</b> (Hon. Sec., 30-34 Elizabeth Street, Sydney.)	Australian Natives' Association. Balmaln United Friendly Societies' Dispensary. Friendly Society Lodges at Casino. Leichhardt and Petersham Dispensary. Manchester Unity Oddfellows' Medical Institute, Elizabeth Street, Sydney. Marrickville United Friendly Societies' Dispensary. North Sydney United Friendly Societies. People's Prudential Benefit Society. Phoenix Mutual Provident Society.
<b>NEW ZEALAND: WELLINGTON DIVISION.</b> (Hon. Sec., Wellington.)	Friendly Society Lodges, Wellington, New Zealand.

### Diary for the Month.

- May 18.—N.S.W. Branch, B.M.A., Executive and Finance Committee.  
May 18.—Illawarra Suburbs Med. Assoc. (N.S.W.).  
May 19.—W. Aust. Branch, B.M.A..  
May 20.—The City Medical Association (Sydney).  
May 25.—N.S.W. Branch, B.M.A., Medical Politics Committee; Organization and Science Committee.  
May 26.—Vic. Branch, B.M.A., Council.  
May 27.—S. Aust. Branch, B.M.A..  
May 27.—Q. Branch, B.M.A., Council.  
May 28.—N.S.W. Branch, B.M.A..  
June 2.—Vic. Branch, B.M.A..  
June 4.—Q. Branch, B.M.A..  
June 8.—Tas. Branch, B.M.A..  
June 8.—N.S.W. Branch, B.M.A., Ethics Committee.  
June 10.—Vic. Branch, B.M.A., Council.  
June 10.—Q. Branch, B.M.A., Council.  
June 11.—N.S.W. Branch, B.M.A., Clinical.  
June 11.—S. Aust. Branch, Council.  
June 15.—N.S.W. Branch, B.M.A., Executive and Finance Committee.  
June 16.—W. Aust. Branch, B.M.A..

#### EDITORIAL NOTICES.

Manuscripts forwarded to the office of this journal cannot under any circumstances be returned.  
Original articles forwarded for publication are understood to be offered to *The Medical Journal of Australia* alone, unless the contrary be stated.  
All communications should be addressed to "The Editor," *The Medical Journal of Australia*, B.M.A. Building, 30-34 Elizabeth Street, Sydney.  
(Telephone: City 2645.)